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These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were Richard J. Behles, Historical Librarian/Preservation Officer; María Milagros Pinkas, Metadata Management Librarian; Angela Cochrane and Carol Harling-Henry, Resources Division; Sarah Hovde, Abra Schnur and Megan Wolff, Services Division.

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UNIVERSITY OF MARYLAND

THESES

1880 (c)

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[1] Title page in middle of thesis. Three pencil drawings on one folded sheet.

HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1851-1892; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

Author	Title	Notes
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UNIVERSITY OF MARYLAND

THESES

1880

Blubaugh, C. (Charles B.)	Typhoid Fever	24p. (faded ink)
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Lamdin, E. T. S. (Edward)	Typhoid Fever	25p.
Clark, J. C.	Lobar Pneumonitis	29p.
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Louchery, D. C. (Daniel)	The Blood, the Heart and Circulation	31p. (partially faded ink)
Turner, W. D.	Diphtheria	19p. (partially faded ink)
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Norment, R. B. Jr. (Richard)	The Ophthalmoscope and Its Use	10p. Bound out of order...
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Schaeffer, T. W. (Theodore)	Glycosuria, Diabetes Mellitus	20p.
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Sutton, H. C. (Harry)	Typhoid Fever	19p.
Drach, J. H. (John)	Transfusion of Blood	29p.
McPherson, J. C. (Chester)	Epilepsy	24p.
Rowe, R. S. (Robert)	Rest as a Therapeutic Measure	20p. (partially faded ink)
Clark, A. N. (Amos)	Diphtheria	21p. (no title page)
Sidwell, F. H. (Frank)	Chloral Hydrate	31p. (partially faded ink)

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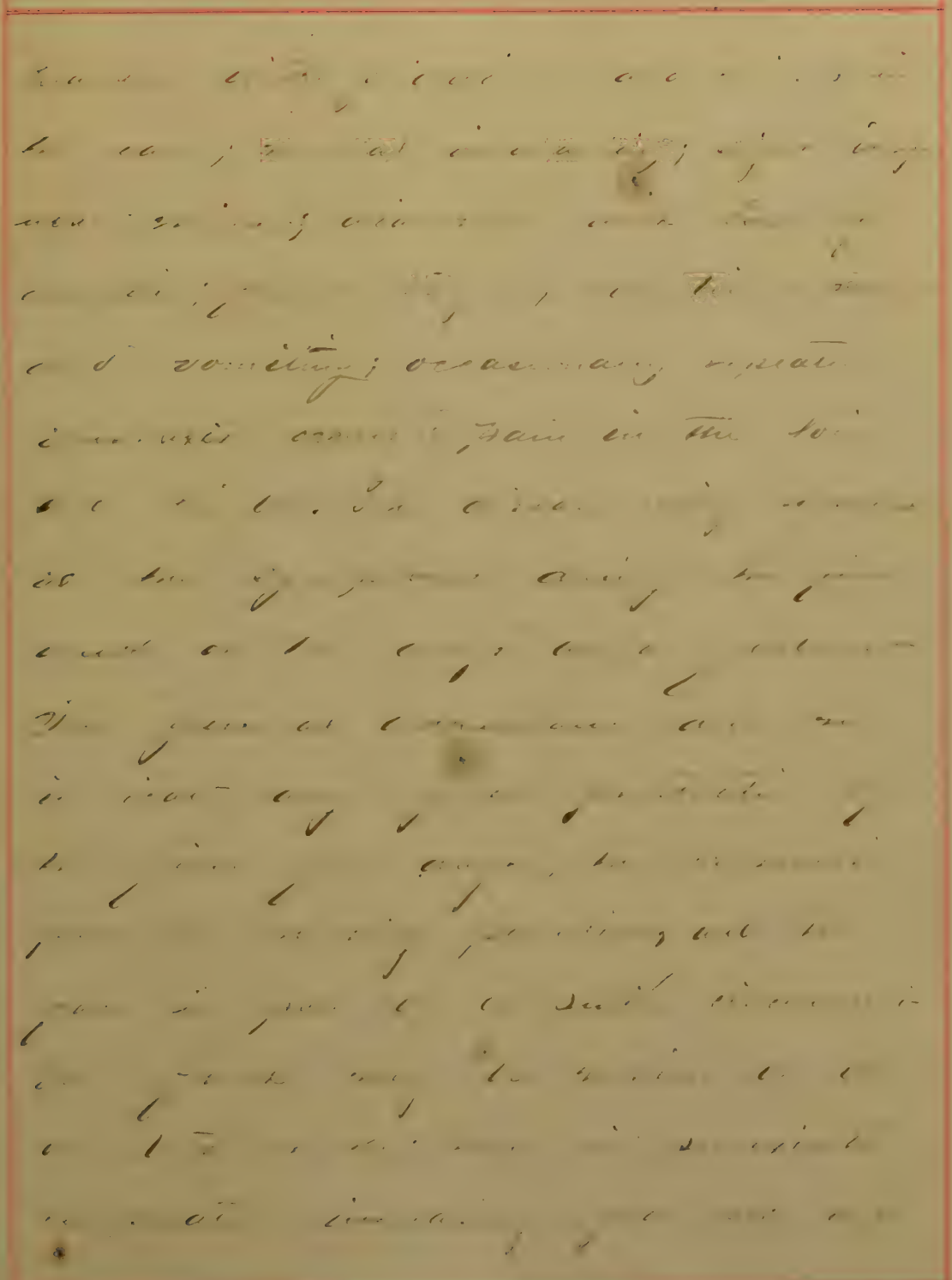
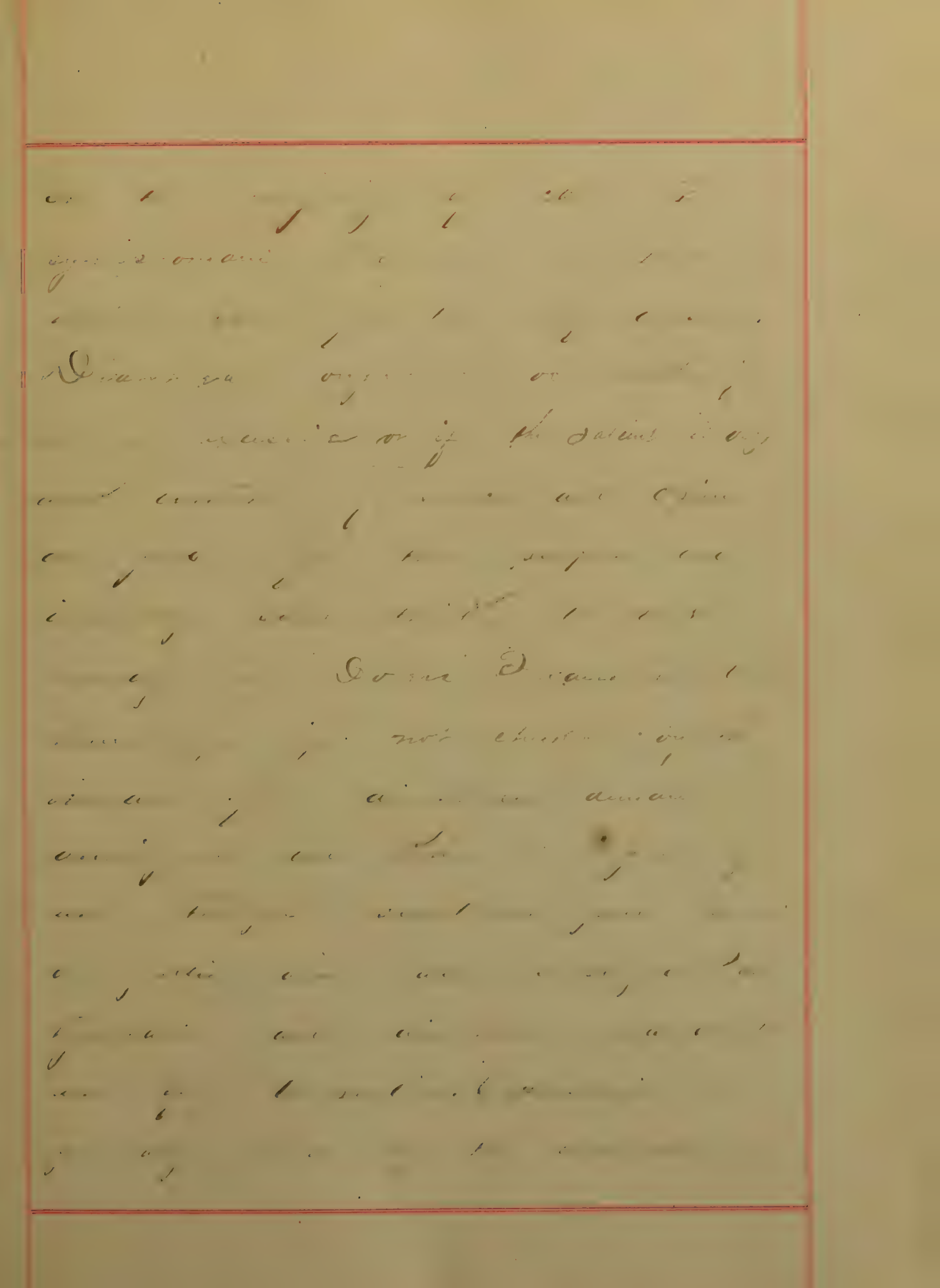
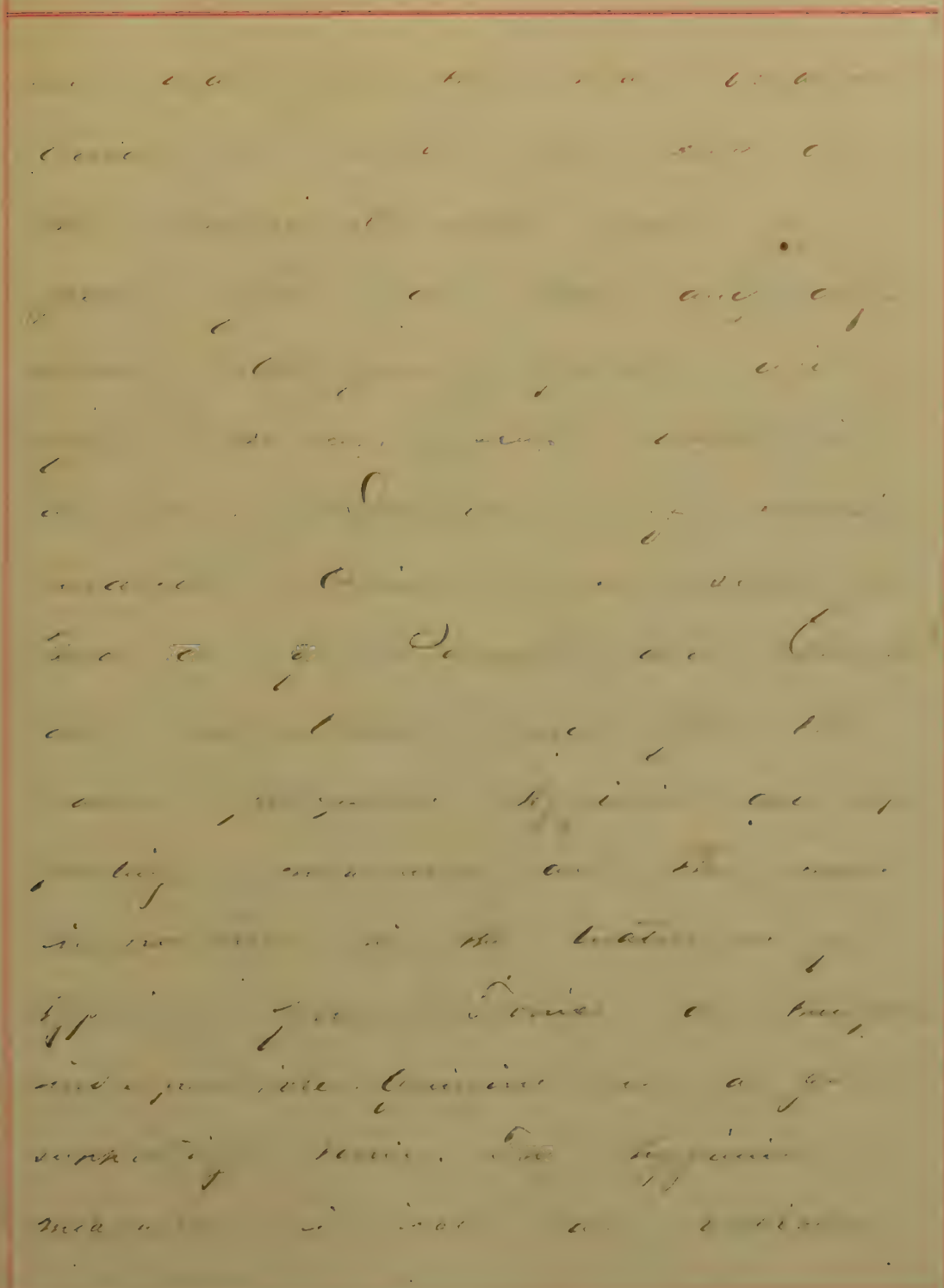






Importance of Scientific Hygiene.

To a rational & educated mind there is nothing in the whole realm of nature more imposing & impressive than the grand & universal fact that the whole universe is under the dominion of fixed & indelible laws. The untiring labor of intellect, through long years has gradually evolved this truth. At first, indeed, its universality was but slightly, if at all, recognized; but as the restless mind of man began to inquire into the meaning & relationship of the things around him; truth gradually step by step struggled to the light. And now we have it exemplified in a thousand ways in the various sciences which adorn our civilization.

It is the object of all science to elucidate truth; to explain facts; to point out the cause of such & such effects; and by the generalization of facts to arrive at the fixed laws of things. How far the investigations of the natural world below man has succeeded, the present condition of science & education will reveal. But not satisfied with the study of things around him, he has assayed to investigate that wonder of wonders his own being. At first sight it would appear that his progress has been slow; but when we consider the intricacy of his task, and then turn to what has been accomplished, we must ac

knowledge that while we are far from the end of our investigation; nevertheless, we have made grand strides towards it. Enough, however, has been revealed by his study of the human organism, to show that man is no alien in nature; but that his physical being is alike under the dominion of law. Thus we conceive it to be one of the grandest conceptions of which the human mind is capable, to be able to see the unmistakable evidence of universal law: in the circling of worlds; in the combination of their constituent atoms; in the wonderful processes of organized beings; and even in the construction of

formation of his own body.
If the chemist, the geologist and astronomer, find such a charming study in the observance of the consistancy with which changes take place in accordance with the fixed laws which their sciences have discovered, how much more intensely interesting must be the manifestations of the same principles in their own bodies, the most complex, intricate, & wonderfully constructed organism of the earth. No science could have a worthyer object of investigation. Its wonderful endowments, its unparalleled construction & completeness challenge most earnest study, in order that

we may especially physicians understand its laws & their workings, for upon their integrity will depend health; and upon their violation the generation of disease. It is for this end that we must endeavor to understand the laws of the human organism, in order that we may know what is promotive of health, and what is contrary & injurious to its well being.

The object of the science of hygiene is a knowledge of the circumstances which insure health; and it also includes an acquaintance with those agents & conditions, which are productive of disease, for in this view there can be no possible doubt of its

importance. Health & disease are of course merely relative terms, just where one ends the other begins. In the light of our present knowledge it is impossible to say. Health may be said to be that state of the body, in which there is no marked or evident departure from normal action. Disease may be defined as a condition resulting from the interruption of physiological processes. In order then that there may be a scientific Hygiene we must first know what these processes are; the conditions also which promote their healthy action, as well as the ways in which they may be interrupted: in other words we must

known the conditions of health and the causes of disease. This at once suggests the difficulty of the subject for although science has unfolded many of the mysteries of the human body and has disclosed many of the secrets of the natural world; yet it would appear that we are far from the end, and certainly by no means do we perfectly understand the workings of the human organism. No one will hardly deny that the greatest blessing which can attend a human being in this world is good health. It is one of a few things which money alone cannot obtain. How worthy important then is a science which

teaches the manner in which this may be best preserved and at the same time shows the best & only method by which there is any possibility that it may be regained when lost. The only basis upon which scientific hygiene can rest, are the merits & facts determined by physiology: as this science advances so will hygiene advance: but the field is so vast, the considerations so numerous: and the processes of the body so intricate: that it is not surprising that we do not perfectly understand it, and are so often left at sea in regard to questions which are doubtless of vital importance to suffering hu

manity. Every intelligent physician must often be impressed with the fact that good hygiene is his best friend. In most cases his art & remedies are vain without it.

If we could know all the laws of life and it were possible to observe them; if we could appreciate the various causes of disease; and if were in our power to protect the body against them; the face of humanity would beam with the smile of health; and the journey from infancy to age would be a rose plucked of its sharpest thorns. But these things are not possible, and we are left to battle with the consequences;

and it has fallen to our lot in the profession which we have chosen for each to add his mite towards this great purpose. Health is the mark at which we must aim. But disease is rife in the land, and is the enemy we are to overcome; nor can we expect to conquer such a monster in a day. Perhaps, it will never be accomplished, but by study, observation & experience we may ascertain its causes and by removing them, limit its ravages upon the human race.

Our first great weapon must be Scientific Hygiene. This is the ounce of preventive that is worth

the pound of cure. Next to this, we must rely upon the administration of medicine, which, although capable of accomplishing much good by assisting nature in her difficulties; yet at other times, and in other conditions of disease it entirely fails. But still, we are to learn to labor & to wait.

Only now & then, a great boon comes to humanity; and it is impossible to say what the patient labor of the human mind may not effect. For who would attempt to dispute, that the lancet of "Jenner", has not preserved the world from more dessolation, than the swords of many

mighty generals have inflicted upon it. And why may there not be yet to come similar blessings to the human race?

While the importance of scientific hygiene is now a well established fact among physicians; it is only comparatively within a few years that the civil authorities have been led to recognize its great value. This has come about it is true by the earnest advice of those engaged in the practice of medicine. But of course only such could properly estimate the necessity of thorough & systematic investigation of the causes, nature and treatment of diseases.

While the science of medicine now represents a compilation of well defined facts, and a vast body of empirical knowledge; yet every educated physician must feel that there is still a want of further investigation, by which alone the great & fundamental object of his science can surely be advanced. As the result of such reasoning, we have the organization of Boards of Health, under the auspices of municipal & national authority. These are composed of representative men of the profession, to whom the advancement of public Hygiene is specially intrusted, and a

scientific & systematic investigation of State diseases which seem almost entirely to baffle the skill of the physician, is thus insured. All the resources of science, and every helpful aid can be called into requisition, is being used by strong earnest men engaged in this work. It is the study, and certainly often in the power of the general practitioner, to render valuable aid in this laudable undertaking; and by a combined effort it is to be hoped that our knowledge of disease, its prevention & cure may gradually but steadily advance.

The good results of the promise

ance to which Scientific Hygiene has recently been brought, is already becoming quite visible. In large cities where the human race is collected in such numbers, it is easy to see how the matter may be tested; and experience has undoubtedly proven that by proper Hygienic regulations it is possible to diminish notably the rate of mortality. In the city of Richmond for instance, since the establishment of its board of health, whose duty it is to manage the Hygienic regulations of the place, there has been a constance, and quite appreciable yearly decline of mortality.

the Southern part of our country has left the land of a fertile disease. Such has been the devastation that it has elicited the sympathy & the aid of the general Government. This we recommended in the nation board of health the members of which have been selected from among the most eminent physicians of our land. They have been supplied with the necessary means for a thorough investigation of the epidemic & contagious diseases which especially prevail in the South. Through their labors it is to be hoped that we may receive many valuable facts in regard to

such diseases as yellow fever, small pox, typhus fever &c. By their investigation and by the aid of independent research of the medical profession generally, we may expect that as years roll on the great scourge of humanity may be brought one after another more & more under the power of medicine and its great right arm - scientific hygiene. When our science thus has it in its power to protect humanity by a knowledge of the causes of disease, and the manner in which they may be remedied, then the proverb will be proven that the science

of the doctor is one of the great pillars upon which the world rest; and Cicero will have spoken the truth, when he said; that "nothing brings a man nearer to the Gods than giving health to his fellow creatures".

W. P. Whitmore.

February — 1880.

Thesis — February 1887.

Respectfully submitted,

W. P. Whitmore.

Thesis

by

J. Richard Butler

on

Inflammation

1880.

Inflammation is an altered nutrition in a part characterized by pain, heat, redness, and swelling. These phenomena are found in every instance of inflammation from the common boil to the uncommon gout.

In the organs that are confined by bony walls as the brain or the lungs, these phenomena may not be observed but they necessarily exist.

Wherever an injury is received or a foreign body is found in any part, nature sends to the part a greater quantity

of blood than is natural in health for the purpose of repairing the mischief, and this produces pain, heat, swelling &c. of the part and constitutes inflamation. Reasoning from this, inflamation seems to be an effort of nature to resist or repair injury: but if this action is violent on long lasting, it may of itself destroy the part where the difficulty occurs. The object of inflamation seems to be to relieve the affected part whether it be a boil, the lung, the brain, or the

or presence of some foreign body.
The relief is accomplished in some by suppuration or the formation of pus; in other cases, where there is a wound, for instance, the increased blood supplies the necessary material with which to set up the healing process, and for the he[illegible] of wounded or diseased parts more or less inflamation is necessary, for without some inflamation no healing will take place.
And to treat such diseases it is necessary to control the inflamation, keeping it so far subdued that it will not injure the [illegible]

at the same time promoting
it to remain sufficient time
to keep up the healing process
until we accomplish our desire.
I do not pretend to say that inflam-
mation is a cure instead of a dis-
ease, but on the contrary, it is a
disease with a specific cause.
Take for instance pneumonia
or any other internal inflammation,
or the inflammation caused
by the running of a stick into the
flesh, they all have a cause and
the same in removing the
cause we must pull out the stick, or
in other words, remove the
cause before we can get to

subdue the inflamation or in the-
words cure the disease.
I have been talking about remove-
ing the cause but I must first
find out the cause.
It would be easy enough to discover
the cause when it is on the surface,
like the stick run into the flesh,
but it would be a little more
difficult, not much, when it
is internal or deep seated, but we
have only to remember that
it is not by the eye only that
we ascertain the character of
inflamation it is true we can
see the swelling and redness
but there are wounds and sores

on the surface, the character of which we cannot determine by their visible appearance, but have to go to the general symptoms and the history and circumstances of the patient.

If these symptoms and history are carefully studied in any case of deep seated inflammation, they will usually reveal the cause.

For an example, take a man that has pleurisy, and on examination and inquiry we find that he has taken cold, or been exposed so to do, we may safely attribute the disease to

the cold falling on the pleura and causing inflamation there. There are two great and principal causes of inflamation, external and internal.

Aside from mechanical causes or loss of symmetry, such as cuts, bruises, fractures of bone, injuries from mechanical violence, and the taking into the stomach too great a bulk of food or irritating substances. The only causes of inflamation which can affect the system at large, are those in the nature of poisons or humors in the blood and fluids of the body.

These are numerous, and have peculiar and specific tendencies to different organs, and produce a variety of results and diseases. Some of these poisons are miasmatic or consist of miasma, a peculiar exhalation from some form of vegetation while in a state of decomposition.
These are inhaled and throw the whole system into a state of inflammation.
Others are known as contagious, such as produce whooping cough, mumps, &c.
Others again originate in the

system itself from the arrest or imperfect performance of some of the functions of the system as when the kidneys perform their office imperfectly, and the uric acid which they should have removed from the blood is carried through the body and causes some violent inflamation, such as scarlet fever,

Another class of poisons is known under the name of humors, from which originate all the vast skin diseases they may spring from imperfect digestion, from inappropriate

food, or some defective performance of some of the organs of the body by which the blood becomes corrupted or changed in its elements and cause many of the skin diseases of which we are familiar, some of them in the form of mere blotches, some running sores, and some abrasions of the skin which are scarcely noticeable and of but little consequence having but little trace of inflammation.

When inflammation locates itself on any part, and

~~and~~ swelling is produced and often permanent injury and in some cases destruction of the organ.

For instance, inflamation settling on the internal ear, or in the tubes leading to the ear may if continued there long enough lead to a thickening of the lining membran of the tubes, or the tissue surrounding the bones and nerves of the ear and cause deafness.

Or there may settle an inflamation on the ball of the eye causing pain, and

ness, swelling, and finally total destruction of the eye, or inflammation excited on any tender part may produce terrible consequences.

No inflammation takes place on any particular organ or part, if an organ causes a disease peculiar to that organ if it be on the lungs, the patient will have a cough which is the symptom of many diseases, if on the throat, perhaps he may have to swallow; if on the joints there

it upon the stomach, dyspepsia.
The character of the disease will
depend on the character of the
inflammation and the part
which it attacks.
Wherever there is inflammation
it has a distinct and specif-
ic cause. If that cause is not
some violence, mechanical
or otherwise inflicted on the
patient it will be very apt
to be found in the blood.
In order to treat inflamma-
tion successfully, we must
get at the cause and trace
and remove that. We may
palliate it by simply applying

remedies to the inflamation but we can not cure it, the cause must be removed. What would one accomplish by trying to remove the inflamation in a dislocated joint, without setting the bone, or that caused by running a stick into the foot without removeing the stick, or to cure rheumatism, pleurisy, or inflamation of the bowels liver &c, without removeing the cause which produced it. if we contest ourselves by treating the

symptom, by merely palliating the pain, heat, redness, &c. we will never cure our patient.

A

Dissertation

on

Typhoid Fever,

Submitted to the examination

of the

Provost, Regents, and Faculty

of Physic

of the

University of Maryland.

For the degree of

Doctor of Medicine.

by,

Edward L. Landvoir

of

Maryland.

1880.

To

Professor Richard Mc Sherry.

This dissertation is respectfully

dedicated, as an acknowledgement

of thanks, for his earnest endeav-

ours to impart to me a knowl-

edge of that science in which

he excels; and for his many

good qualities as a physician

and a gentleman.

Typhoid Fever

"is a continued fever, characterized by pain or gurgling on pressing the right iliac fossa, by more or less diarrhoea, and by an eruption of rose-red papulae on the abdomen." (Longhton).

Though occasionally abrupt in its mode of attack, the approach of Typhoid fever is usually insidious, gradually arranging the system. We seldom meet with a patient who can specify the exact time of the attack of the disease. The symptoms are divided into those which occur

during the first week, those which occur during the second week, and those which occur during the third and final week of the disease.

The disease generally begins its active onset with a chill. The surface is hot and dry; the countenance is flushed; drowsiness and stupor are present; the mind is irritable and impatient; and delirium often occurs. In some cases the stomach is irritable, causing nausea and vomiting. The urine is generally changed in quantity and quality. During the second week sudden changes

occur. The pulse is weaker and more rapid; delirium is greater; and occasionally spasms occur. The tongue is dry and protruded; the patient is unable to swallow; the abdomen is distended; and there is often hemorrhage from the bowels. During the second week, an eruption of rose colored spots, appears on the abdomen, of a circular form, slightly elevated above the surrounding surface, and which never become vesicular. If these spots be pressed by the finger, they will disappear; but will

reappear upon the removal of the pressure. These spots usually last about three days. At the end of three or four days they disappear, but may be followed by an eruption of similar character. The number of these papules present averages from six to twenty, sometimes more, sometimes less. In the course of the third week they entirely disappear, unless a relapse occur, whereupon they again make their appearance. These spots may be mistaken for flea bites. If they be flea-bites

they will not disappear upon pressure, whereas they will if they be the eruption of the fever.

The symptoms which occur during the third week are entirely of a different character from those which are present in the earlier periods of the disease. The pulse is less frequent and fuller; there is a return of appetite; the abdomen is less swollen; but great emaciation is present. A perturbed appearance of the countenance, pulse sometimes violent, at

at other times quiet and gentle, and profuse diarrhoea, are some of the unfavorable symptoms of the disease.

"Special symptoms." The pulse is variously affected. It is generally very quick, ranging from 110° to 130°. ~~[illegible]~~ If during extreme prostration, the pulse be very faint and rapid, there is great danger of a fatal termination of the disease. Chills and rigors during the early stage, and the practitioner should always enquire if the patient has had a chill, and when. Chills

sometimes occur during the later stages of the disease. The fever is characterized by irregular exacerbations, the temperature usually running from 102° to 106°, Fahrenheit. The condition of the skin varies: sometimes it is dry, at other times moist. There is often a tendency to profuse sweating. Headache occurs during the early stages of the disease: sometimes it is dull, sometimes sharp and lancinating, usually lasting about a week, then giving way to delirium or stupor. The mind is beyond

and feeble, the patient often being in a state approaching that of coma. The greater the delirium, the more serious is the prognosis of the disease. In most cases, however, the delirium is mild. The mind is generally enfeebled during convalescence. The countenance is often vacant or anxious. Deafness is a characteristic symptom of the disease, and it is not unfrequently preceded by, or accompanied with tinnitus aurium.

The loss of muscular

fever is in proportion to the
violence of the disease. Delirium
is twitching of the muscles
occurring during a late period
of the disease, is an unfavora-
ble symptom.

The state of the digestive
organs varies during the course
of the disease. The tongue
varies in appearance, the
surface of it being more or
less inflamed. Sometimes it
is dry and of a brownish colour,
sometimes swollen and red, some-
times it is covered with a
thick black crust. Often the
patient loses command of the

tongue, and if it be protruded is unable to draw it in. Paralysis sometimes occurs. There is usually an eruption about the mouth. Great thirst and nausea are often experienced. Vomiting is of common occurrence, and also pain and uneasiness in the epigastrium. A very characteristic symptom of the disease, and one of great importance in respect to the treatment of the disease, is diarrhoea. Diarrhoea may be either spontaneous, or it may continue after the administration of a purgative.

The discharges are watery, and of a yellow, muddy appearance: pain in the abdomen often accompanies diarrhoea. Another important symptom is hemorrhage from the bowels. This symptom is caused by ulceration of the small intestine. The ulcer perforating the intestine, ruptures one of the branches of the mesenteric artery, and hence the hemorrhage. It usually occurs unexpectedly, and rapidly exhausts the patient.

Besides the rose-colored spots on the abdomen, a crop

of vesicles will sometimes be detected on the neck and thorax. Sloughing of the skin and bed-sores occur during the protracted form of the disease.

"Duration." The duration of Typhoid fever is uncertain, averaging from twenty to thirty days, it is seldom longer than sixty days. The average duration of fatal cases, according to Dr. Jenner, is three weeks. Convalescence rarely begins before the end of the second week.

"Lesions." The lesions occurring in Typhoid fever are numerous,

and there is scarcely any organ in the body which may not be the seat of some anatomical change. The most prominent lesions are the thickening, hardening, and ulceration of Peyer's patches and the mesenteric glands. The glands or patches of Peyer are found only in the Ileum. They are of an oblong form, from one to four lines in length, and one line in breadth. They are always diseased in Typhoid fever, but are seldom affected before the sixth day. Those near the Ileo-caecal valve

are those most deeply affected.
When death occurs, from one to
thirty are generally ulcerated. The
changes which these glands undergo
are of the following nature. They
first become enlarged, when
they present a grayish surface
dotted over with black points.
When an inflammation advances
the patch presents a reddish
appearance, and the follicles
burst, ulcerate, and slough,
always leaving an irregular
ragged ulcer with thickened
edges. These alterations give a
satisfactory account for the
pain experienced when the

abdomen is present, for the diarrhoea, and for the hemorrhage from the bowels. The presence of these internal ulcers is not always attended with fatal results. They may cause death by exhausting diarrhoea or by profuse hemorrhage; but they may, and often do, heal, being clothed with a new mucous membrane. However, it is very evident that the existence of these ulcers is likely to prolong the illness of the patient, after the abatement of the fever, to render his

recovery, and to even endanger his life. The mesenteric glands are more or less changed: in the fatal cases they frequently contain pus. Occasionally, changes are found in the liver, spleen, kidneys, heart, brain, and other organs. Inflammation of the mucous membrane of the large intestine, usually seated in the caecum, occurs in about one third of the fatal cases. The liver often presents a waxy appearance. The spleen is more or less enlarged, and its colour is darker than when in health. The blood

is usually deficient in fibrin.
The brain has no lesions peculiar
to this disease: sometimes there
is meningitis with effusion.
"Causes." Nothing is known in
regard to the essential nature
of the disease, which can be pos-
itively proven. It attacks all
classes, rich and poor, and it
occurs at all seasons of the year.
It rarely attacks persons over thirty
years of age: it generally attacks
those between fifteen and twenty
five. Strangers visiting a locality
are more liable to it than those
who have long been residents
of the same locality. Most

writers consider it a non-contagious disease: many eminent authors, however, maintain the contrary doctrine. The local causes are unknown. It often journals epidemically. It is frequently found in the aged. It is an idiopathic affection.

"Diagnosis." Typhoid fever is known by the slowness and insidiousness of its attack; by the diarrhoea accompanied with hemorrhage; by the rose-coloured spots on the abdomen; and by the general disturbance of the nervous and vascular system. It is most likely to be confounded with malarial, or with typhus fever.

In intermittent fever the stomach is usually inflamed, the liver is more discoloured, the spleen less diseased, than in typhoid fever; and there is no ulceration of Peyer's patches or the solitary glands. Typhus fever generally attacks persons over thirty years of age, diarrhoea seldom occurs, there are no rose-coloured, and there is no special anatomical lesion. The practitioner is never able at first to establish the diagnosis of typhoid fever.

"Prognosis." The prognosis varies considerably, being most favourable in children under fifteen years of age.

Not even the mildest case of typhoid fever can be considered free from danger, and it matters not how low a patient may be, there is no symptom so fatal that death should be considered inevitable. Among the unfavorable symptoms are violent delirium, deep coma, stupor, restlessness, loss of strength, profuse diarrhoea or hemorrhage, very high temperature, and excessive tympanites. If the disease is to terminate favorably, the will soon abate in severity. "Treatment". The treatment will first consist in removing all causes of irritation; second, to moderate

and subdue vascular excitement;
third; to support the powers of life.
The person should be kept quiet,
and all noise and excitement should
be avoided in the room. The room
should be kept well ventilated.
In the early period of the disease
a mild purgative should be ad-
ministered. According as the medical
attendant shall deem best, he
will give one or two ounces of
castor oil, rhubarb and magnesia,
or a seidlitz powder. Strong
cathartics should never be
given If the pulse be full
and strong, venesection may be
tried to lessen vascular congestion

Some writers, however, condemn the use of the lancet. The protracted duration of the disease should be born in mind, and great care should be exhibited in the quantity of blood taken from the patient. Cups or leeches may be applied to the back of the neck or thorax may be employed. Cold sponging with vinegar and water may be employed if it do not shock the patient. The internal use of ice and iced drinks is very grateful and beneficial to the patient. In low cases the head should be shaven, and pounded ice in a bladder applied. If the diarrhoea be profuse, opium

in combination with astringents should be employed. When the tongue is dry mercury is a very valuable remedy given either in the form of calomel or blue mass. Dr. Wood strongly recommends oil of turpentine in doses of fifteen drop every hour. In all stages of the disease, stimulants and tonics are to be employed. Beef tea, chicken broth, brandy and wines, sulphuric ether, etc. may be given. Quinine should be used in large doses. The internal use of nitrate of silver is highly spoken of by some writers. It is said, by its astringent action, to stop diarrhoea and heal the ulcerated glands of Peyer.

If there be profuse epistaxis, a roll of lint soaked with a weak solution of nitrate of silver may be placed in the nostril. To subdue hemorrhage from the bowels, astringents by the mouth and rectum are to be used. Perfect rest and quiet are essential to control the hemorrhage. Opium may be freely given. Throughout the disease strict attention must be paid to the diet. In the first stages it should be mostly liquid; in the more advanced stages solid food may be allowed. Milk in the form of milk punch may be allowed in all the stages of the

disease. Iced lemonade and carbonic acid water are very useful.

During the convalescence the patient should pay strict attention to hygiene. The bowels should be kept open by mild aperients. The patient should not be allowed to indulge his appetite to excess. During the disease strict attention should be paid to the ventilation of the apartment. Finally, careful nursing and kind attention will have the most marked effects in hastening the recovery.

Edward T. Tamdin.

A Thesis

on

Solar Immunity

by

Breckin C. Lamb

of

Maryland.

Pneumonitis

Pneumonitis or pneumonia is an inflamation of the parenchyma or substance of the lungs.

There are several varieties of this disease, founded upon the different portions of the lung involved, and upon the predominance of symptoms of certain other diseases. The disease is called lobar pneumonia, when one or more entire lobe is the seat of the inflamation. This is the most common variety, and is the kind

usually meant when the simple term pneumonia is used. It is also known by the name of croupous pneumonia. Lobular or catarrhal is the term applied to that form in which the small lobules are the principal seat of the inflammation. This form is especially peculiar to infants. When the inflammation is situated chiefly in the interstitial or cellular tissue it is called interstitial or intervesicular pneumonia.

If a large portion of the pleura is involved and the pleuritic symptoms are prominent it is called pleuro-pneumonia.
When the disease is associated with a low, asthenic, typhous condition of the system it has received the name of typhoid pneumonia; and when bilious affections are present, whether simple derangement or bilious fever, it is called bilious pneumonia. Finally the disease may be acute or chronic.

Acute lobar pneumonia being the most common form is the variety which I have selected as the special subject of this Thesis. There are three marked and distinct stages in an attack of acute lobar pneumonia, corresponding to the different degrees and forms of inflammation. The first stage is that of congestion. In this stage there is an abnormal accumulation of blood or hyperaemia in the affected part, just the same as in inflammations

of other structures.
If a portion of lung be examined in this stage, it will be found to be a little heavier than it is in a healthy state, though it still floats in water. It will also be found to be of a darker red color than a normal healthy lung, and also to crepitate less under pressure. If cut into, the cut surfaces present a dark appearance, and a somewhat turbid and frothy serum flows from it. This stage is

of short duration, and if the inflammation continues, which it generally does, as resolution rarely ever takes place in this stage, the lung undergoes still further alteration. Exudation speedily follows. A coagulating material escapes from the blood and coagulates within the air sacs, and the sacs are filled and distended with this exuded matter. The lung is solidified and presents an appearance a good deal like the liver, and the stage is called hepatization.

The substance of the lung is softened and breaks down under pressure more readily than it does in its healthy state. The lung is much heavier than normal, owing to the amount of solid matter which has exuded from the blood. Air is also absent and portions of solidified lung sinks in water.
The cut surface of the lung presents a granular appearance. If the progress of the disease be favorable resolution takes place and

the exudation is removed by absorption and secretion, the greater part being removed by absorption.
If however the disease advances, the inflammation goes on to the third stage or the stage of purulent infiltration. The lung is examined in this stage presents a greyish appearance. The texture of the lung is still more softened and friable and is full of this purulent matter which sometimes runs out when the lung is cut, or may be made to exude upon

the pressure. Abscess and gangrene sometimes occur in this stage.

Acute lobar pneumonia is generally ushered in with a chill, followed by febrile action, difficult breathing and pain in the affected side. The pain usually follows soon after the chill, or in some cases, may precede it. It is often in the beginning very severe and is much increased during inspiration. The intensity of the pain is usually in proportion to the amount of coexisting pleurisy.

The breathing is always more or less accelerated, the amount varying in proportion to the intensity of the inflamation. Cough is usually present from the first, but is sometimes wanting. It is usually dry at first, but is soon accompanied by a peculiar rusty colored expectoration. This rusty color is given to it by the mixture of blood with the matter during its passage through the smaller bronchial tubes. Fever occurs in the invasion of the disease together with

headache, thirst, loss of
appetite, heat of skin and
the usual accompaniments
of febrile reaction.
These are the symptoms
which mark the existence
and progress of the disease
in its commencement and
during its first stage.
The physical signs which
are recognized in this
stage are, slight dullness
on percussion and the
crepitant rale, the latter
of which is of extreme
diagnostic value, as it is
most always present

If the disease advances which it generally does, as resolution rarely takes place in this stage; the inflammation goes on and soon reaches the second stage. During this stage the symptoms undergo some changes. The breathing becomes more accelerated. The respiration and circulation loose their ratio, [illegible] in some cases [illegible] [illegible] [illegible] [illegible]. The [illegible] usually [illegible] [illegible] this stage. Cough and expectoration continue

but are not necessarily increased. The fever persists or is increased. being in proportion to the amount of lung involved. Sudden increase of temperature denotes the involvement of another lobe.

The physical signs in this stage are, bronchial respiration, broncophony, increased vocal fremitus and marked dulness on percussion. If the progress of the disease be favorable, resolution now takes place, and the morbid products of the

inflamation are absorbed; the dyspnoea and fever diminish; the sputa return to its normal character; the bronchial respiration and dullness on percussion disappear; and finally the patient returns to health. If however the symptoms do not abate, and the disease advances, it soon runs into the stage of suppuration. In this stage all the previous symptoms are increased, the pulse becomes more frequent and feeble, the difficulty and

frequency of breathing is increased, the expectoration becomes abundant and purulent, and finally death takes place, generally by asthenia. Abscess and gangrene sometimes occur in this stage, and are dangerous, though not always fatal sequelæ.
The physical signs do not show much in this stage.
There are other symptoms which belong to pneumonia the most important of which relates to the urine. During the first stage and in the

stage of solidification or until resolution takes place the chlorides are usually absent from the urine, or if present, are in smaller quantities than normally. Their presence is shown by the nitrate of silver test. If present there will be a white precipitate thrown down when the solution of nitrate of silver is added to the urine. They return during convalescence and their presence is almost diagnostic as regards the favorable

termination of the disease. Albumen is sometimes present in small quantities in the urine. Delirium sometimes occurs in this disease and is rather an unfavorable symptom. Complication with other diseases of course will involve additional symptoms.

Inflammation of the substance of the lungs, like bronchitis is due in a vast majority of cases to exposure to cold and vicissitudes of weather. It occurs in certain seasons of the year oftener than in

other seasons, being more prevalent in winter than any other season.
The disease is sometimes developed in the course of other affections as bronchitis, pleurisy, scarlitina, typhus and typhoid fever, and in some cases it may follow an injury inflected upon the chest. In some cases, no cause at all can be traced and the disease appears to be developed spontaneously.
The diagnosis of acute lobar pneumonia is made

by the presence of the various symptoms and the peculiar physical signs which have been described. The prognosis will depend upon the extent of lung involved, the coexisting complications and previous health of the person. Pneumonia occuring in a strong robust previously healthy person tends natural to recover and in such cases a favorable prognosis can always be given, unless complications with other diseases set in. While if the disease

occurs in persons whose constitutions are broken down by other diseases by drink or in the aged, the prognosis is more or less grave according to the intensity of the inflammation and the extent of lung involved. Symptoms which denote an unfavorable termination of the disease are; great frequency and feebleness of pulse; frequent and laborious respiration, violent delerium formation of a heart-clot and the expectoration of a dark bloody colored sputa commonly known as the

lemon-juice extraction.
It has been asserted that
recovery never takes place
after the appearance of the
lemon-juice expectoration,
as to whether this is so or
not is [illegible] doubt,
but it is certain that
recovery is very doubtful.
Treatment. [illegible] very
few diseases, for which so
many [illegible] kinds of
treatment have been tried
as for pneumonia, and [illegible]
for each [illegible] has been
claimed by the respective
author. Bloodletting,

antimony and mercury were formerly the means mainly relied upon, but since the time of Mr Todd these agents have been to a very large extent discarded and an opposite plan of treatment substituted, namely, that of stimulation. While others claim that little or no medicinal treatment at all is necessary that the patient will recover if left to nature alone. As regards these different modes of treatment that plan should be adopted

which is best suited to
the condition of the patient;
bloodletting being very
beneficial in some cases,
while it would be very
injurious in [illegible] and
in other cases stimulation
may be indicated from the
first. The [illegible]
in acute lobar pneumonia
furnish different indications
for treatment. The principal
objects of treatment in the
first stage are to [illegible]
the intensity of the inflam-
mation, relieve the various
symptoms as much as possible

and place the system in a condition to tolerate the disease. For these means various remedies have been resorted to. Bloodletting may be done in some cases, but should be done cautiously and only in those cases where there is high febrile action with full pulse and the patient presenting the condition of plethora or at least a robust constitution. The opposite condition, or that of anaemia with weak pulse contraindicates it and calls for milder depletion or

even in some cases stimulation at first. After the local abstraction of blood by means of cups or leeches is followed by good results. When bleeding is not admissible and the patient not requiring stimulation, saline aperients and sedatives may be used. After the administration of a saline aperient, if the skin is hot and pulse frequent, a nauseating emetic may be given but should not be pushed very far. Viratrum viride and aconite may be given for their sedative effect the latter being [illegible]

when it is desired to avoid depression. These remedies are of course not called for, unless the symptoms are urgent and are contra-indicated when there is feebleness or tendency to depression. Opium may be given to relieve pain and tranquilize the system. In a great many cases, these severe means are not called for and a simple saline purge followed by a dover's powder at night with soothing applications to the chest will meet the indications in the first stage.

The treatment in the second stage is directed to [illegible] of resolution, relief of various symptoms [illegible]d to the support of the powers of the system. [illegible] depletion should never be done in this stage, [illegible] depletion by saline purging. Sedative remedies are [illegible] given in this stage, and if ever given, must be given cautiously. Opium is given and is a very valuable remedy in this stage. Counter-irritation by means of tinc. iodine, stoke [illegible] ointment or [illegible]

methods [illegible] relief to the local symptoms. The main object however in this stage is to support the powers of the system, and this is done by the administration of tonics, alcoholic stimulants, and a nutritious diet. Ammonia is a very useful remedy in this stage, but cannot take the place of the alcoholic stimulants. The amount of alcoholic stimulants to be used will be in proportion to the intensity of the disease and the general condition of the

patient, always remembring that the tendency to death is by asthenia, during the progress or resolution the same tonic and supporting treatment is to be kept up with special attention to the diet.

W. S. Archer
Maryland

H. S. Archer
Md

Thesis

Intermittent Fever

In taking Intermittent Fever as the subject of my Thesis I wish to mind that this is a disease that has existed from time immemorial. Before there was life on the Globe, malaria was probably present, as although vegetable decomposition may not be the whole cause of its formation, still I maintain that without this decomposition, we would have no malaria.

Ages ago when this continent was partialy submerged and resembled the Everglades of Florida of the present

when the vegetable life predomina-
-ted, we can scarcely realize the
amount of this poison, so aptly termed
malaria that must have been for-
-med. In my native county Har-
-ford, this disease is extremely prev-
-alent, being nearly bounded by the
Chesapeake Bay, the Sun pools
and the Susquehanna Rivers,
while the Bush river runs up
into the southern portion.
In this lower part of the county
called the neck the disease is of
frequent occurrence, and an un-
acclimated person by exposing
himself would be almost cer-
tain to contract the disease.

although strange to say the na-
tives will assure you that there
is not the slightest danger, that
there is no more healthful place
anywhere, though they will admit
that a few miles from their neigh-
borhood they do have chills.

The origin of Malaria is a
subject that has occupied the atten-
tion of scientific men for a long
time, in 1717 Lancisci attributed
it to vegetable decomposition, this
view was received and adopted
for a long time, but recent discov-
eries have shown that something
more is required for its produc-
tion, as in some localities where

there is excessive vegetable decompo-
-sition the disease is unknown
it is mostly generated in marshes
and swamps, but is not confined
to them; at a temperture lower than
60° F it is not generated, and the
first decided frost appears to kill,
or at least to render it inert; as we
approach the Equator and Sea
Coast it is most abundant.
While Forests may obstruct and
prevent it from passing, when blown
to them by favorable winds, they
accumulate and hold it.
If unobstructed it may be car-
ried great distances by the wind.
It may be developed in what were

previously healthy places by the upturning of the soil.

It has been proved that it is heavier than atmospheric air; persons sleeping in an upper story may escape while those on the ground floor are affected.

The fact that a growth of trees will prevent its passage is often taken advantage of, either by planting trees between the dwelling and the place where the malaria is formed, or as my Grandfather did by building a house in a grove a few hundred yards from the regular dwelling, and living there through the summer

and early fall, he and his family escaping entirely, while before this was done chills were of frequent occurrence. A recent writer has advocated the planting of the Eucalyptus tree, which he says has been proved to possess the power of absorbing the malarial poison. If this is indeed so and can be carried out in practice, it will prove a great boon; the expense would be trivial compared with the immense benefit that would ensue, the money that is paid for quinine yearly, would be vastly more than the interest on the amount required; the value

of the lands in the infected districts would be quadrupled, as I know personally, for in my own County this land although extremely fertile and capable of yielding large crops, sells for a mere song compared with that in more favoured sections. If the Government would take this in hand, and appropriate an amount sufficient for the experiment, and if successful prove a national blessing.

A vast amount of ingenuity industry and skill has for a long time been devoted to the labor of isolating and describing the active principal of this morbid poison

All effort however has been fruit-
-less. In the past year some exper-
-iments have been made in Rome
that have been rewarded with com-
-plete success. They were conduct-
-ed by Signor Tommasi of Rome,
and Professor Klebs of Prague.
They made repeated examination
of the lower strata of the atmos-
-phere, of the soil and of the
stagnant waters, and succeeded
in isolating a microscopic fun-
-gus, specimens of which being
placed under the skin of healthy
dogs caused distinct and regular
paroxysms of intermittent fever,
and produced in their spleens

that peculiar condition recognized by pathologists as ague cake. This achievement must be regarded as an important one, and may result in our being able to control this noxious product.

Intermittent Fever - fevers intermittent - fever and ague, paludal or periodic fever, is a fever, according to Hungleson, consisting of paroxysms, with a complete state of apyrexia in the intervals. The chief types are the Quotidian, Tertian and Quartan, the quotidian occurs every day, the tertian every other day, and the quartian every third day.

The symptoms of an intermittent are those of a decided, and and completely marked cold stage, a stage of concentration attended with paleness, collapse, impaired sensibility and coldness more or less diffused, followed by general rigors. After this the hot stage occurs, or stage of expansion, the heat returning partially and irregularly, and at length becoming universal and much above the standard of health. The pulse is now hard and strong, tongue white urine high colored, and thirst considerable. At length the sweating stage, or

stage of termination makes its appearance, the moisture usually beginning on the forehead, face and neck, and soon extending universally, the heat abating, thirst ceasing, the urine throwing down a sediment, and the functions being gradually restored to their natural state.

In the cold or first stage although the patient complains of creeping chills, and his teeth are chattering, his temperature is really rising, and the thermometer placed under the tongue will show it; during the hot stage it rises to 105° or even 110° F

If the chill is slight it is called a dumb chill.

At the end of the sweating stage the fever intermits, and there is no recurrence of it, till the next paroxysm takes place. The paroxysms usually occur in day time and when once established in the system they have a tendency to return, even slight exposure after the patient is cured will bring them on again. Enlarged and indurated spleen is often left as a sequel, caused by the congestion of the portal system during the cold stage. This condition is known

- as ague cake. The liver and kid-
neys may also be involved.

During the cold stage it is best
to give the patient warm drinks
with hot bricks to his feet, and if convul-
sions ensue he should be bled, and
the warm ablution given.

When the hot stage comes on, effer-
vescing draughts, cushed ice,
and nitrous powders if there is
no gastric disorder; the body may also
be sponged with tepid water or
vinegar and water. During the
sweating stage the body may be washed
and linen changed.

In uncomplicated cases Cinchona
Bark if the stomach will tolerate

it, given in doses from a drachm to an ounce will arrest the disease. Twenty-grains Sulphate of Quinia between the paroxysms will almost certainly break them up. Professor Stillé advises the dividing of the twenty-grains into twelve pills one to be taken every two hours while the patient should not be profusely purged or vomited it is proper if he is constipated to give a few grains of calomel, and Ipecac as an emetic. After the disease is broken the quinine should be kept up for a week or two lengthening the intervals. Fowlers Solution may advantageously given in 10 gtt. doses

If anaemia and general debility occur as sequels, tonics are required - quinine and iron especially with nutritious diet and exercise in the open air.

I have no doubt that a change of air, a trip to some of the watering places where the patient could drink the Chalybeate waters, would prove very beneficial.

Enlargement of the spleen may be treated by rubbing in the liniment of mercury, the patient standing in front of the fire.

In the pernicious form if the heart is enfeebled stimulants must be given. If there is active

cerebral congestion bleeding should be taken. Hypodermic doses of Chloroform have been given with a view of abridging the cold stage.

Opium is indicated by restlessness, delirium and convulsions.

The prevention of another paroxysm should immediately entered into. A scruple of Sulphate of quinia may be given at a dose during the paroxysm, and if there is no evidence of cinchonism repeated in three or four hours. If patient is unable to swallow hypodermic injection may be used.

After one pernicious paroxysm the patient should be in bed & kept

warm at the time another may be expected. An opiate will under the prevention measure.

In treating of children, Smith says, that when over three and a half years it differs but little from the intermittent of the adult; while in those under that age it presents certain peculiarities his experience is that infants are more liable to the quotidian than any other form, and he explains it in the following manner. In quotidian ague the malaria has been supposed to act more powerfully on the system, or the system is

more susceptible to its influence than in the tertian form, and how the fact that the quotidian is the prevailing type in tropical countries, where vegetation is luxurious, marshes extensive and heat intense; that as the resisting power is feebler in the infant than in the adult, even in this climate where the adult most frequently has the tertian form, the quotidian is most prevalent among infants.

He also says that infants sometimes receive the disease from their mothers. It is still true that, even during gestation in malaria, the infants whether born at full time

but while the second or febrile is well marked, the first and third are much less pronounced.

As a rule the patient does not shake in the first stage, but a slight tremor may, or may not, be observed. The countenance presents a sunken appearance, the lips and fingers are livid while other portions of the body have the goose skin appearance. The blood leaves the surface which consequently shrinks, while it accumulates in the veins and internal organs; the pulse is feeble and readily compressed, the surface grows cool from the

diminished supply of blood while the internal temperature rises. This stage is often so slight, and lasting so short a time readily escapes notice, and the second stage first attracts attention, there is no perceptible difference between this stage in the infant and the adult. Enlargement of the spleen is more common in infants than in adults.

In treating children no time must be lost, as succeeding paroxysms may be more severe. For a child two years old one grain doses of sulphate of quinia or one

and a half of Sulphate of Cinchonia, three times a day will probably effect a cure, continued until all symptoms of ague have disappeared, then give twice a day for a few days, then once a day for a week and conclude the treatment by giving it two or three times a week. It is only by the continued use of this remedy that intermittents can be entirely broken up. If the case is a protracted one, and attended with anaemia, the combination of Iron with the quinia will be of advantage

A Thesis
Subj. "The Human Skeleton"
By Ulline S Reynolds.

Univ. Maryland Feb. 1880

The Human Skeleton.

" "

It requires no profound understanding, nor laborious research, to appreciate the truth that "man is fearful & wonderful" made. Even a casual study of his form soon reveals to the intelligent mind, that he is the work of a finished hand, & indeed the very culminating wonder of the world. In the human body we find the most varied, & intricate parts, united to form the most complete engine of the earth. Well indeed may we wonder at, & admire, the perfect adaptations of its parts, the unity of its admirable contrivance for

the accomplishment of purposes
& the perfect harmony of its various
parts organs & systems, By these
manifestations of creative wisdom,
the reasonable mind is at once
brought to a sense of the in-
finite power of its Designer &
Maker, Such truths are indeed
indicated in every part of the
human body, but they are nowhere
more plainly seen than in the
"Human Skeleton", Yet aside from
these considerations, & in a mere
scientific point of view, & especially
to us as physicians, a thorough
knowledge of this part of the
human body is of paramount
interest & importance, For it is
the foundation & framework

of the animal organism. Man-
ner acquaintance with its form,
structure, peculiarities & prominences,
will in many instances depend
our recognition of the nature & lo-
cation of disease & injuries. In
this way an accurate study &
knowledge of the skeleton becomes
important, first that we may
do full justice to those who in the
time of their misfortunes rely upon
us, & secondly that we may pre-
serve a good & enviable reputa-
tion, than which there should be
nothing sweeter to a human
being. But we would not be un-
derstood as advocating that a
knowledge of the human skeleton
is indispensable, & that the rest

of anatomy is comparatively un-
important for it the physician
nothing is unimportant, which leads
in the least upon his science, still
for numerous reasons we are jus-
tified in placing this division of
anatomy, as one of its most re-
sential parts. From the character
of its functions, from its mechan-
ical relations from the points of
departure which it affords us, in
judging of the relative position
of important organs & structures;
from such circumstances an
accurate knowledge of the human
skeleton becomes one of the great
pillars upon which must rest a
rational, & scientific practice of
medicine. We may conveniently

review & consider this wonderful structure under the following heads 1st The substances of which it is composed, 2nd Their form, shape, arrangement, & function, 3rd The skeleton as a whole. Of course it would be impracticable to attempt to pass in review a detailed account of the subject as this division presents it, indeed such a minute consideration of the structures which make up the human skeleton would be beyond our ability to do it justice, & we can only hope to deal with the subject generally, & present such prominent facts & features, as may best convey a description of the skeleton, & thus fulfill the

the object of this paper. The first division of our subject will consider, the substances of which the skeleton is composed. The principal & essential elements of this part of the body are "Bone", "Cartilage", & "Ligaments", & of these Bone is by far the most abundant. It is a firm hard substantial substance easily separated by certain chemical processes into an animal, & an earthy constituent. In virtue of its elements of organic origin, & equally on account of its mineral constituents bone is endowed with distinctive peculiarities, which are necessary to the performance of its function in the Animal Economy. The presence,

The presence of the Earthy [illegible],
chiefly the salts of lime, gives to
bone its characteristic firmness
& solidity, while the organic matter
which it contains insures the requisite
amount of toughness & elasticity.
By the intimate mechanical as-
sociation of these two we have
a substance formed, capable of
fulfilling all the requirements
of its part in the animal [illegible]
That this is a mechanical asso-
ciation, & not a chemical com-
bination as might be supposed
is established by the fact, that
either may be isolated without
changing the shape & form of
the bone, Thus for instance a dilute acid
will dissolve & remove the

Earthy material, & the bone has only lost its firmness & solidity, while the organic constituent may be removed by combustion, depriving the bone of its elasticity & toughness. A knowledge of these facts are turned to practical account in explaining certain pathological phenomena & certain normal conditions with which the surgeon is familiar. Thus it follows from the constitution & ~~properties~~ function of bone, that anything which interferes with its proper nutrition, & disturbs the relative amounts of its organic & inorganic materials, will to the same extent alter its physical properties, & seriously disturb its function, [illegible]

nor infrequently finds in children of scrofulous parentage an abnormal condition termed Rachitis, in which through some disturbance of the physiological balance the inorganic constituents of the bones become reduced in amount, & having lost their characteristic firmness, the bones - in consequence of the weight of the body & muscular action, become bent, & distorted, the result of which is often the most distressing & unsightly deformity. Then again at a later period of life, the physician recognizes a condition call osteo-malacia in which the same results follow from a diminution in the solid constituents of the bone. It is

also a well known fact among
Surgeons; that the bones of old
people often fracture upon the ap-
plication of comparatively insig-
icant violence, while those of
children resist to a much
greater degree, & are rarely frac-
tured. Many authorities explain
this as depending upon a difference
in the relative amount of its
two constituents or factors, but
others declare that the clinical
fact is to be explained, not by
a difference in relative amount,
but by a variation in the manner
in which the organic & inorganic
matter are associated & arranged.
An examination of a transverse
section of bone from any any

part of the body. It is to be
made up of an outer thin, hard
& firm layer, while within we
find a cancellated structure
& there is also in certain cases
an inner layer, which in some
situations, as in the head
cranium, is even more hard
& brittle than the outer. The number
& arrangement of these structures
will vary according to different
parts of the skeleton, depending upon
the situation from which the bone
is taken, & its particular use
in the body. Cartilage is another
most important constituent of
the skeleton & cannot be properly
studied by, or in connection with
the bones. It is a firm tough

Structure with distinctive characteristics are its smooth polished surface, & its perfection of elasticity. It is aggregated at all the movable joints of the skeleton, where it performs a most important function. This substance is interposed between the different pieces of the skeleton, where free freedom of movement is permitted. Sometimes merely covering the opposing surfaces of bones, & in other situations it is disposed in cavities & recesses, into which other bones are to fit. Under this head we may also consider Fibro-cartilage, a substance which differs from the former in several important

particulars. As microscopic structure we are assured upon competent authority is essentially different from that of true Cartilage, for in the substance called Fibro-cartilage there is not one cartilage cell. Interposed between the opposing surfaces of Cartilage is found another important, though not as extensive structure, as those which we have already mentioned. This may be considered a supplement to Cartilage, by means of which its function is perfected. The fluid secreted by this membrane is the lubricator of the joint, it is necessary to their continued movement without friction. This membrane is termed "synovial

membrane", & the fluid which it secretes, the "Synovial Fluid". The remaining important constituents of the human skeleton are the ligaments. These are strong fibrous, non-elastic bands, which bind the bones together, particularly at the more movable articulations, & in such a manner as to permit motion in fixed directions, & to a definite extent. They vary much at different points, being every where proportionate to the protection & resistance which they are meant to afford. In the second division of our subject we will consider the form, shape, arrangement, & function of

the constituent parts of the skeleton. Of course it would be impossible in a [illegible] space to treat this part of the subject in any thing like a complete & systematic manner. For the shape & arrangement of the bones & pieces of the human skeleton are so various, so they are peculiar & the differences, which are in these respects observed, are as numerous as the object which they fulfill. The bones have been classified for convenience of study into Long, Flat, Short & Irregular, although irregularity is more or less observed in them all, & these divisions are somewhat arbitrary

Remembering that the skeleton is bilaterally symmetrical it may be truthfully said that each bone has its own peculiar form, place & function, which gives us a variety of arrangement only commensurate with its separate pieces. When we consider the complexity of the human organism, its multiplicity of movements & functions, & the variety of its exquisite mechanical contrivances, we can well understand the necessity for an irregular & complicated framework. The functions of bone is evident from a moments reflection upon its physical properties. It is the solid foundation & framework upon which the rest

of the body is supported. By its strength & firmness it is peculiarly fitted to sustain the softer structures, to protect the more delicate & vital parts, & to preserve the form & symmetry of the body. In so perfect an organism as the human body one part can scarcely be said to surpass another, in the completeness with which it performs its function; but still the beautiful & perfect adjustment of means to an end seem in some instances more striking than in others. In the study of the articulations we are confronted with by no means the most [illegible] mechanisms of the body. Among the chief factors of the joints

The fibro Cartilage & fibro [illegible],
with certain accessory structures
which have already been mentioned,
Their form shape & arrangement
are infinitely varied, & are in every
instance determined by the surfaces
of the bones which they join, &
the function they are meant to
perform. The ingenuity & perfection
of their arrangement, & the nicety
& exactness with which they per-
form their functions, & allow the
junction of the pieces of the skeleton,
is indeed remarkable. The Carti-
-age as we have before said is
a highly elastic substance
By means of its smooth & polished
surfaces, with its lubricating fluid
the Synovia, the free, & extensive

movements so characteristic of the human body are permitted. But in view of its elasticity it also performs another important function in the diminution of the shock, which every movement of the animal frame subjects it to. But for this property the integrity of the skeleton & through it the softer structures which it supports, would be jeopardized at every step. While true cartilage merely facilitates the movement & function of certain bones upon & with each other Fibro Cartilage fulfills in addition to this, another important object, & constitutes in some situations the strongest bond of union between the bones

Such as for instance. The intervertebral
fibro-cartilages ——— discs of the
vertebral column, The form shape
& arrangement of the ligaments
present the same principle
as the other parts of the skeleton
which we have noticed, Their
function is to bind the bones
strongly together in such a way
as to permit motion in certain
directions, They also form an
important protection to the
joints, & various of Examples
of these facts may be
seen in the articulations of
the Extremities, In other situations
the ligaments bind the bones
firmly & almost immovably
together, as at the pubic &

Sacro-Iliac articulations where very little, ~~movement~~ if any motion is allowed.

The next division of our subject will consider briefly, the skeleton as a whole. The human skeleton is composed of more than two bones, joined & held together as we have seen, by the intervention of cartilages & ligaments. Its principal characteristics are the ~~the~~ irregularity of its outline & surfaces. In one place its constituents are arranged into a system of levers by which the animal movements are accomplished, and in other parts of the skeleton we have its component parts arranged so as to form cavities & protection

canals; in which the more delicate structures are preserved & supported. In still other situations we find the osseous structure spread out into broad flat plates, affording extensive support, & protection, & at the same time supplying broad & expanded surfaces, for the attachment of an important class of organs — the active agents of movement & locomotion. When we view the human skeleton we are at once struck with the fact, that it consists of a central axis, from which the rest of its parts may be said to radiate. This has been termed the spinal column, & is composed of a number of segments, which indicate

a canal for the reception & connection of the spinal cord, In the perfection with which this is accomplished, we again recognize another of the numerous instances with which the human body abounds, of the unmistakable handwork of a supreme & profound intelligence. In the cervical region of this canal where it is intended that there should be considerable motion, we find the cord does not fit it closely, but the canal being enlarged movement is allowed without injury to its contents. In the dorsal region of the spine where the movement of the parts upon each other is much more limited the necessity

of space being absent, the canal contracts, & in the lumbar region again we find it enlarged to accommodate the cord & preserve it from pressure in the movement natural to these parts. Upon the top of the spinal [illegible] is situated the skull — a bony box which presents many interesting features & points worthy of observation. From its construction alone, one would at once infer that it is meant for the strong & secure protection of delicate & vital structures. Within it we find, enclosed as it were in its strong hold, the brain — that most complex & wonderful organ of man — the dwelling place of of reason & intellect — the [illegible]

of the senses & the great governor
of all his conscious actions
together with many of those intricate
processes which belong to vital
phenomena, It is also interesting
to observe how perfectly the special
organ of sight is surrounded
& contained in a cavity which
is in every way fitted for its
exception, & for its preservation
against possible accidents.
But it is useless to enumerate
further examples, for whether
we examine the cavity of the
mouth or nose — or the nice
arrangement for the sense
of hearing, — whether we view
the organs of ~~the~~ respiration
or the great formation of the

circulation, enclosed as they are in their bony & Cartilaginous protection, — whether we contemplate the system of levers of the Extremities — whether we consider the arch of the foot, or the vaulted roof of the Cranium; in Either, & in all of these we should out multiply examples, not only of how perfectly every part of the human Skeleton is adopted to its special function; but in each we must also see the unmistakable evidence of an ingenuity & intelligence, to which human power, & human achievements must bow in adoration,

The Blood, The Heart and Circulation.

D. C. Loucheny

A Student of

The School of Medicine

[illegible]

The Blood.

[illegible]

is the circulating and the most important fluid of the body, [illegible] of its tissues except a [illegible] as the cornea of the eye and the pairs.

[illegible]

containing more oxygen, is returned to [illegible] its mission in the systemic circulation, [illegible]

[illegible] tion and a mildly restricted diet.

[illegible] more oval than the red but [illegible] less abundant have amoeboid movements to penetrate the [illegible]

[illegible]

condition of the nervous system and lack of

[illegible]

[illegible]

[illegible]

sallow pale [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] pet to [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

The organs essential to the

The heart beats in the healthy adult [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

one degree in the rise of temperature.

[illegible]

[illegible]

and stimulants (moderate) will increase

[illegible] action especially as to force and [illegible]

whilst [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

tion or engaging the will.

a wonderful structure, supplying [illegible]

[illegible]

waste, a self motor and perpetual dur-

ing life, modifying its action to the

needs of the system, ever vigilant and

[illegible] to the very end, watching pre-

[illegible]

tion with a constancy, a wisdom and

precision, scarcely less than an all-obser-

[illegible]

[illegible]

[illegible]

[illegible]er the radial bone, near the [illegible]

[illegible]

[illegible]

[illegible]traction (primarily gives rise to the pulse and as the pulse is affected accelerated or modified by disease it follows that the pulse is a most [illegible]

[illegible]

[illegible] and fullness and complete [illegible]

[illegible]

A Thesis

on

Diphtheria

by

W. D. Turner,

of

Virginia.

Diphtheria.

9

[illegible]
Differing from essential
fevers, one of the most
[illegible]
It has been known for a
remote period, and has been
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

Claiming of different ailments
[illegible] the affection [illegible]
being discovered, when there
was few or no local symp-
[illegible] pointing to the existence
[illegible] the disease. After the disease
[illegible]

cause, and it is held by many distinguished clinical observers, that its special cause is, a con-

ex-

Heuristhenie.

An
Inaugural Dissertation
on
"NEURASTHENIA"
submitted
to the examination of
The Provost-Regents & Faculty of
Physic
University of the of Maryland:
for the
Degree of
Doctor of Medecine
by
Edward M. Schaffer
Baltimore
Md.

Feb. 14. 1880.

To the
Faculty of Physic.

Gentlemen Professors:

In presenting this, my Graduation Thesis, to your intelligent and indulgent consideration, I would respectfully ask, that your attention be directed not merely to the actual "fruit" therein contained, — necessarily, at this time, forced and immature — but, also to the spirit which it discovers, as an earnest of "germinal life" awaiting development in due season.

While I recall, with grateful appreciation, your earnest efforts in our behalf, and the cultured ability with which you have fulfilled your relations to us during the pleasant

years of our association, — I would not be thought invidious, whose expressing my special obligation to one of your number, whose untiring zeal, marked urbanity & graphic delivery have always rendered his lecture-room a ~~[illegible]~~ source of mental invigoration & physical refreshing.

In designating our honored "Prof. of Anatomy & Physiology" I desire to bear testimony to the contagion of his enthusiasm; — to the zeal for our "Noble Art" which he has awakened, and to the spirit of intelligent research, thus ~~aroused~~ nurtured within us, at a period of our lives so fertile in energy & resources. — Be this his reward!

Neurasthenia.

Neurasthenia Spinalis. "Reizbare Schwäche."
(Nervous Dyspepsia.)

Among the many gratifying signs of progressive interest in Scientific Medicine existing at the present day, none offer more encouragement, than the recent advances in Neurology.

The tendency, to "use or reaching conclusions on fragmentary evidence, or on undifferentiated data; to mistake coincidence for causation":— so insinuating & dangerous in this very obscure department of Medicine, — is now yielding to a more intelligent method of inquiry. The Nurses, as a class, has the diagnostic skill of the observer to the utmost, by reason of the subtlety & complexity of their manifestations.

Neurasthenia — the subject of my thesis

is a malady which has developed mainly during the last half century; and, as yet, has little or no classic literature.

It is a functional nervous disease of modern & notably, of American, origin: chiefly found in the North & East, among the brain-workers & well-to-do classes. Perhaps, the first author to give prominence to the neurosis under discussion, was Dr. Geo. M. Beard of N. York, whose able paper on this subject has received well merited attention, at home and abroad; and is freely quoted by Erb in Vol XIV. (Page 369) of "Ziemssen's Encyclopaedia". Since this publication, many able, review articles have appeared, & the few subjoined references will show

that this disease is fast establishing itself in the professional mind & receiving recognition from our best neurologists. —
Dr. Weir Mitchell has recently published a clinical lecture on this subject:
Dr. J. S. Jewell of Chicago has contributed largely to magazines &c, in very suggestive articles: Dr. Worthington Myers, of N. York discussed "Nervous Dyspepsia" in May number of Virginia Med. Monthly; and in the annual address before the Gynecol. Soc'y of Pennsylvania, Dr Goodell has presented a most valuable exposition of the "Relation of Neurasthenia to Diseases of the Women."

Neurasthenia — poverty of nerve force — is to be distinguished from

simple anaemia poverty of blood - with which it is frequently associated; and also from hysteria, to which it often leads.

Its diagnosis from the numerous organic lesions which it so closely simulates, (Incipient Tabes Dorsalis, Myelitis &c) is greatly facilitated by the history given, & by the evanescence and striking disparity between the subjective and objective symptoms "The nervously-exhausted state may, indeed, both follow and precede numerous other maladies, not only of the nervous system, but of special organs, and may accompany other diseases; but it is none the less a disorder of itself, and has an array of symptoms peculiar to itself" (Beard)

Males are predisposed - youth + middle

age, most liable to this affection; whose subjects are chiefly recruited from Hero-pathic families whose psychoses, hysteria, & the varied neuroses are hereditary.—
Excessive mental or bodily effort is the developing agent. (In the foreign journals, most of the reported cases are assigned to Sexual Excess.)
The objective symptoms are decidedly negative. There is no trace of disturbance of motility; only the power of endurance in muscular action is weakened.
In many patients; a moderate degree of anaemia is the only distinct symptom;— while the facial expression indicates the hypochondriacal tendency of the disease.
Dyspepsia.- flatulence and constipation

mark the progress of the malady & invasion of the sympathetic system; but before speaking of the phase of Neurasthenia, viz: "Nervous Dyspepsia" (to which, time & space will require my future remarks to be especially directed) I would notice a sinking weakness and rapid fatigue of the lower extremities, almost pathognomonic in character:—The arms & entire muscular system may, however, be similarly affected.—This is a feeling of profound exhaustion, unaccompanied by pain, yet often far worse than pain. These attacks come, unannounced, and may as suddenly disappear. "Nothing here is constant", says Dr. Beard, except inconstancy."—The "liabilities" haunt the debtor. The patient feels himself

to be mentally and physically "insolvent."
There is no marked paraesthesia.
Cold hands & feet — general & local chills
& flashes of heat and a barometric sensi-
tiveness to changes in the weather (quantity
of ozone, some say) indicate disturbances
of circulation & innervation.
The following language from Dr Goodell is so
descriptive & apropos that I make no apology
for here inserting it. "Local Anaemias and
Hyperaemias ensue. In other words, in that
equilibrium of the two movements of wear
and repair which means health, a disturb-
ance occurs which means disease. There
will be sudden ebbs and flows of impov-
erished blood in the various vital organs —
the same kind of surface flushings and

blanchings going on in the deeper structures. Alternations of anaemia and of hyperaemia of brain, stomach or spine, with very generally stable hyperaemia of the reproductive organs. The Cerebral Exhaustion or Irritation manifests itself by clavus, wakefulness, heaviness, asthenopia, by inability to read or to write or to concentrate the thoughts on any given subject; the Exhaustion of the Stomach, by flatus, nausea capricious appetite &c: Spinal Exhaustion, by tender spots, backache, and weariness."—

The Psychopathic symptoms are allied to those of hysteria: general timidity morbid fear, failure of memory, hallucinations - intense self-consciousness &c &c. Among other minor symptoms, may be

mentioned, abnormalities of secretion, tenderness of teeth and gums, exaggerated tendon reflex, "fibrillary contractions", disturbances of Nerves and Organs of Special Sense &c.

With this array of "unpleasantness" before us, it is a questionable comfort to be able to assure our patient that his disease is entirely functional. Eb states that Neurasthenia rarely leads to organic lesion — trophic disturbances never occur; + with the plausible hypothesis of Spinal Anaemia, we resort to the obliged physiological assumption of so many Neuroses viz: "fine disturbances of Nutrition in the Cord" Mal-nutrition of the Nerve-Centres is followed by irregularities of circulation

from weakened innervation. Poverty of the blood means enhanced susceptibility to emotional excitement — cerebral and spinal irritability — and thus the chain is completed. — H. Rosenthal of Vienna, under the caption of "Spinal Irritation" formulates two varieties of this functional Neurosis; — the hyperaesthetic and the depressive: corresponding, respectively, to spinal hyperaemia and anaemia; presenting, as a rule, in the female and male, in the same alternation as regards frequency. The irritation of the Vaso-Motor centres in latter case inducing vascular contraction, whilst with the weaker sex, hyperaemia more often results, from relaxation due to shock & general nervous

parisis. "The physiological fatigue of the Nervous Elements" says this author "becomes exaggerated and fixed from lack of prompt + physiological repair.

From what has preceded it may be inferred that a favorable issue may be expected under appropriate treatment, in the Neurasthenic state. A steady persistence, for months, perhaps, in the use of hygienic + medical resources, will in the majority of cases, prove most satisfactory. An apparent cure will be effected, but the nervous diathesis will readily reassert itself under exciting causes.

Nervous Dyspepsia

The prominence of this symptom of nervous exhaustion - often the first to present itself - demands a few words in excuse. Nervous Dyspepsia rivals Nature in her "abhorrence of a vacuum". The patients are always hungry and never quicked. Food gives marked, temporary relief to the inner cravings and attendant muscular exhaustion; but such is the caprice of the appetite, that it would be rare to find an experienced patient venturing far without "a crust in his pocket" In these cases gastric acidity is the usual concomitant.

On the other hand - anorexia often exists - there is a craving for acids,

and an irritability manifested that would suggest the presence of Cancer. Flatulence, enteric rumbling, constipation or diarrhoea, are common to all. "When the great sympathetic system becomes implicated and the function of the Pneumogastric is impaired, the stomach & bowels are distended with gas to a most intolerable degree; the tongue becomes coated and pasty looking, bowels constipated; the patient's temper & disposition are changed; he is preoccupied with the state of his health & becomes a veritable "self tormentor" (Myers)

There is no doubt that localized self-consciousness can produce a <u>revulsion</u> of Nervous Force - in the same

manner as counter-irritation.
Tuke, as quoted by Dr Goodell,
has shown by many abst illustra-
tions that "Thought, strongly directed
to any part, tends to increase its vas-
cularity and consequently, its sensibility."
Hence "hallucinations" and muscular
+ local insanities".
It is needless to say that irritation
of the terminal nerve-filaments of
the pneumogastric excites grievous
cerebral agitation during the digestive
process. — A medical author uses
the following language, abridged de cela.

Dyspepsia.

Ah me! What mischiefs from the stomach rise!
What fatal ills, beyond all ghostly question!
How many a deed of high and bold emprise
Has been prevented by a bad digestion!

I ween the savory crust of filthy pies
Hath made full many a man to quake & tremble,
Filling his stomach with dyspeptic sighs,
Until a huge balloon it doth resemble.
Thus do our lower parts impede the upper
And much the brain's good works molest
(and hinder
We gorge our Cerebellum with hot supper
And burn, with drams, our viscera to a
(cinder
Choosing our arrows from Disease's quiver,
Till man in misery lives to loathe his liver."

ent

The treatment of Neurasthenia is, par excellence, Hygiene - Mental Moral and Physical.
Diet and Regimen, with a mild expectant medication, is all sufficient in therapeutic power.

The blood and nerve tonics, where obviously needed, should receive a fair trial. Iron, Quinine, and Strychnia are most valuable. The Mineral Acids, Phosphoric Acid &c., are indicated when persistent anorexia exists. Dietetic means should be employed, as far as possible, to counteract the tendency to Constipation: cold water enemata - salines & podophyllin granules are very serviceable.
The distressing Flatulence, has, in my experience, yielded most readily to Tr. Nuc. Vomic. Mv, a little while before meals — as recommended by Ringer.
The Bromides are invaluable

for quieting the Nervous irritability and mental derangements attendant on Neurasthenia. They should be given freely in gr. XV–XX (or more) doses, ter die, in some simple bitter. Dr. Weir Mitchell prefers the Lithium Bromide, which his own use, and that of the French and German Therapeutists, has favorably tested. It ranks first among the Bromides, in hypnotic power. The Potass. Bromide is the most toxic in its effects – the Sod. Bromide, least, as demonstrated on animals by Dr. Robert Bartholow. The Sod. Bromide may be considered a happy mean; and, from the author's observations, is least liable, when long used, to induce a

Subacute Gastritis.

A favorite pill of Dr. Mitchell's consists of the Valerianates of Quinia, Zinc and Strychnia in combination.

Ergot is highly recommended for its contractile influence on the Cerebral Vessels

In conclusion, I wish to treat more particularly of the Hygienic management of the disease.

The Neurasthenic's "Elixir Vitae" is Pure-Fresh-Air, cool & bracing. I have seen an Ocean breeze, vaporize a "sea of troubles" into thin air. Change of scene with residence in the mountains or at

to sea side is a marvellous restoration.
Where this cannot be obtained,
Massage and Electricity, aided
with the scientific perfection to which
Dr Weir Mitchell has brought their use,
accomplish a mental & physical
regeneration. It is pre-eminently
a sinecure "Fat & Blood" treatment—
for the patient.
For the merits of the Turkish Bath
often recognised by the profession,
as a therapeutic agency in Nervous
affections, much might be quoted
without the aid of Medication.
Says Dr. Flint— "As a remedy for sleep-
lessness. Hot Air Roman Baths are better
than Bromides, Chloral or Opiates"

Drs. Hammond, Sayre, Van Buren, Metcalf & others constantly invoke the aid of these baths for the benefit of the Neurasthenic & nervously affected.

Electricity is generally considered by the laity as a prerogative of the rich, in the treatment of their bodily ailments.

Here I down to apostrophe, I should call "Cold Water" the "Poor-Mans Electricity" or, its best substitute. I admire the pride of the Englishman in his "Morning National Tub" & read with pleasure, the following remarks in a recent number of the "Lancet" ~~to the effect that~~ viz: "Cleanliness comes next to Godliness; —

a habit, as wholesome as it is manly;
and, since it requires courage and
self-denial — one equally calculated to
<u>brace</u> the <u>moral</u> as well as physical
fibre of our nation."

Cold <u>Sponge</u> Baths — immediately
on rising — allowed in vigorous friction
may be enjoyed Winter & Summer,
and soon become as great a luxury
as they are a tonic stimulus &
flagging nerves & sluggish circulation.

<u>Electricity</u>, like massage "raises
the body temperature, stimulates the
Nervous system, promotes the secretions,
and increases assimilative action"
Again, by irritation of Vaso-Motor nerves
reflex alterations of circulation in

deeper parts are produced. Moreover, as Anstie has shown, "the new and sharp electrical impressions break up the mental attitude of morbid concentration on the hysterical or the pseudo-neuralgic pains."

General Faradism produces passive exercise of the deep tissues, and, according to Dr Rockwell, is especially serviceable in Nervous Dyspepsia. Central or Spinal Galvanization is also in high repute in the same phase of the disease.

P.S. I had prepared report of several typical cases of "male" Neurasthenia occurring under my

own observation or care, but the length of the letter admonishes me that my object is the cure & not the seduction of the "Exhausted"

My sincere thanks are due any reader who may have followed me in my efforts to present a faithful, & at the same time, succinct account of — "Neurasthenia"

O.H.

able that the breathing of the observed will in the least annoy the observer. This method (the indirect) is [illegible] make than the other and is consequently more employed. It does not necessitate the light being to the temporal side of the eye observed as does the direct method. What then is our conclusion? The indirect method is the most easily made, gives a view of a larger field, is the most convenient. In consequence of these facts it must be the most useful.

Thus far we have spoken only of the use of the ophthalmoscope only as applied to viewing the fundus. Has it not other uses? Yes, and highly important ones too. First. It enables us to determine defects in refraction. Second To find any opacities in the humors of the eye, no matter how small, how slight or how deeply seated, provided they be in that part of the organ made use of in ordinary vision. Third to determine the presence of foreign bodies within the eye. Fourth.

It enables us to diagnose the displacement of any part within the eye ball, to detect abnormal adhesions between contain parts &c. Such then are the uses of the ophthalmoscope.

Plan of an examination.

Dr. Browne in his work on "The Ophthalmoscope" gives the following concise plan of an examination with the ophthal moscope. I do not think that a more clear and concise statement of such an examination could be given.

"[Instil atrophine 20 minutes before]

1. Examine the cornea, lens, and

vitreous with the mirror alone
Small nebulae, opacities in the
lens, or flocculi in the vitreous may be
observed and their position noted
before proceeding to view the in-
verted image. Dislocation of the
crystaline may be thus seen, and a
detached retina is sometimes visible.
Slight opacities are best seen with
a moderate amount of illumination,
as a strong light renders them semi-
transparent." Dr. Brown here recom-
mends the employment of obliqua illu-
mination if there seem to be any opacity
whatever.

"2. Estimate the condition of re-
fraction ---- Ascertain if the

lens be in Situ".

"3. Pass on to the optic disk. Note its shape; its color, whether it errs on the side of redness or pallor; its margins, whether sharp, clear, and even, or woolly, indistinct, or jagged; whether the level of the surface be above or below the rest of the fundus, and if the vessels show a sharp outline."

"4. Distinguish between arteries and veins; note their relative size, straightness, or tortuosity; clearness with which they can be followed; if hidden at any portion of their course; pulsation, if any; and whether ~~they~~ are caused in passing over the margin of the optic disk."

"5 Pass on to the retina; observe if its transparency be impaired, especially if the edges of the vessels are blurred. Satisfy yourself that the amount of transparency is in the retina and not in the media... Look carefully, especially in the region of the yellow spot, for deposits or hemorrhages, and at the periphery for pigment-shaped pigmentation."

"6. The choroid; note its color, and rim of opening surrounding the optic disk, whether circular or atrophied, irregularly showing a "crescent" of sclerotic; look for atrophied spaces, and whether the large choroidal vessels are too plainly visible."

As to the use of atropia; Dr. Thiselton Dyer whom there is no higher authority

in this land, says it is only needed by those who are not thoroughly skilled in the use of the Ophthalmoscope or those who are out of practice.

Having thus briefly sketched the history, construction, use and application of the Ophthalmoscope I will close this imperfect ~~essay~~ with a consideration the forms of the instrument, ~~and the requisites to successful Ophthalmoscopy.~~

I. The hand Ophthalmoscope. This is the only form of the instrument in general use among surgeons. I shall briefly notice three forms of this instrument, considering my

self with little more than a mention of other forms.

1. Schreichs small Ophthalmoscope consists of a perforated concave metalic mirror, behind which is a movable clip into which may be placed any one, of series of small lenses; and two object lenses. Its disadvantages are these. The mirror easily becomes tarnished and must be polished frequently; the lenses (small) are apt to become broken, soiled or lost.

2. Netchets Ophthalmoscope is a modification of Schreichs, over which it possesses great advantages. The imperfect reflecting

surface of Herschels instrument is reflected in this by a silvered glass mirror, from the central part of which the metal has been removed. The two object lenses are a part of all these instruments. Behind the mirror above described is placed a small disc in which are mounted four small lenses which may be turned in front of the eye hole in the mirror. The only things I see looking in this instrument are these. The number of the lenses is too small, and they may easily become soiled; and having become so they are hard to clean or ex-

count of their mounting.
B. Lorings instrument is the most perfect of the present day. The reflecting surface of this is the same as in Nicholls. Its advantages all accrue from the arrangement of the small lenses. These are mounted in a disc which is enclosed in a case, which is perforated over the right hole of the mirror so that any lens may be brought into place without exposing the others. There is also in this disc a small blank which should always be brought in front of the perforation so that the lenses are all enclosed

in the case. I think that this instrument is all that could be desired.

Other forms of the Ophthalmoscope.

The table Ophthalmoscope is little more than the hand instrument enlarged.

The Anti-Ophthalmoscope is of so little use as barely to require mention.

The binocular instrument consists of the parts of a simple hand instrument behind the sight hole of which two glass wedges are arranged in such a manner as to double the image. Behind these are lenses so ar-

ranged as to bring these two
images into one, thus giving a
stereoscopic view of the eye.
The instrument is too complicated
and costly ever to come into
general use.
This completes what I have to
say on this subject. I know that
I have not said half that could
and should be said, but to give
the subject a just consideration
would far exceed the limits
of an article like this.

R. S. Vorment. Jr.
Class of '80

If we hold the mirror above described, at a distance of several inches, say eight or ten, from the eye to be examined, we will succeed in rendering the pupil luminous, but we will not succeed in getting a view of the fundus of the eye at this distance. The appearance of the pupil will vary under different circumstances. If it be dilated very widely, it will receive a large quantity of light

and give off a considerable quantity. If it be contracted it will receive but a small quantity of light, and give off but a small quantity. To convert the luminous circle thus formed, into an image of the fundus of the eye, two methods are employed. First. Direct. Second Indirect.

II. The Direct Method.

In this method we use the mirror alone. A consideration of the structure of the eye would lead

us to the conclusion, that in order to see the fundus of the eye we must approach very near the cornea. And such we find to be the practical fact. For in the direct method of examination the eye of the observer, must be brought within a little more than one inch, of that of the observed; that is if both be emmetropic; and for the sake of simplicity we will in the description of these examinations suppose the eyes of the observer and

observed to be emmetropic.
In order that this may
be so, it is necessary
that the observer should ex-
amine the right eye of the ob-
served with his right eye
and the left eye with his
left; otherwise the noses
of observer and observed will
come in contact, and pre-
sent the near approach.
Let us look into the mech-
anism of this.
The source of light should
always be to the temporal
side of the eye to be exam-
ined, that is, on the right side

if it be the right eye and the left if it be the left. Figure 2 shows divergent rays from the [illegible] rendered convergent by a concave mirror, and reflected into the eye at E. The rays cross in the vitreous humor and form a circle of dispersion dd on the retina. The divergent rays coming from a given point a would on emergence be rendered parallel, and have the same optical value as if they proceeded from behind the eye in the direction of the dotted lines oo. In

the same way, rays from any other point be [illegible] be affected and have the optical value of rays proceeding from behind the eye and in the direction of the dotted lines fp.

The eye of the observer placed behind the aperture of the concave mirror would see a large erect image of the fundus in the position fp - oo.

IIIo The Indirect Method.

In this method we bring to our aid the object lens. As to the degree of convexity of this lens, there are two

sizes used, that is, lenses of
2 and 3 inch focus; some
authors recommending a 3 1/2
inch also. The great uses of
this lens are, 1st that it
throws the light into the
eye in such a manner
that it will spread over
a wider space in the fundus,
and 2nd it will catch more
of the emerging rays and
give an image of a larger
portion of the fundus at one
time. The mechanism of this
method is shown in Fig 3
at the end of this essay.
The divergent rays from a source

of light F are rendered somewhat convergent by the concave mirror and still more so by the object lens. They cross in the vitreous as in the preceding method and form a circle of dispersion b a on the retina. The emerging rays from any point as A are refracted to the conjugate focus of the lens at A' and those from any other point in the same way to its conjugate focus as B & B'. An eye placed behind the aperture in the mirror at E would perceive an inverted image of a portion of the ret-

dus, at the distance of the
focal length of the lens to his
side of the lens, provided
the mirror were held far
enough away from, and at the
same time near enough to
his joint to enable the observer
to see anything distinctly at
that place. The size of the
image is of course affected by
the focal length of the lens.
The stronger the lens the
less will the image be.
These then are the methods
of examination. What are
the advantages and disadvant-
ages of each? Let us see.

The direct method is the hardest to make, but gives the largest image. It has this disagreeable feature, that unless the fundus be examined with "exceeding great" rapidity the observer is annoyed by the breath of the observed. This last objectionable point does not belong to the indirect method, for when we consider that the distance between the eye observed and the eye observing is from sixteen to twenty-four inches, (and some put the distance as high as twenty five inches) it is hardly possible

simply modifications of those named above, and while no two makes are exactly alike, the perforated mirror and the convex lens constitute the great basis of all.

Having thus briefly cited the history of this important discovery and invention, for it is both, let us examine the principles upon which it is [illegible], and examine some of the forms now on the market and try to find out which is the best, if best

there be.

When the eye is directed toward any object, the rays of emerging from that object are concentrated by the Cornea and crystaline lens, and brought to a focus upon the retina. A part of this light is absorbed by the pigment within the eye, and the remainder is reflected out of the eye. But it is obvious that, as the light returning from the eye is subjected to the same lenticular forces as when

entering it, except that these forces are reversed in their order, it will be reflected directly to the point from which it started. These considerations then give us the conditions of the problem to be solved in order to make [illegible] some contrivance, by means of which we can see within the eye.

To place the viewing eye, the viewed eye and the source of light in a straight line; and in such a manner that

the light shall not dazzle the eye of the observer, nor the head of the observer obstruct the light in its passage to the eye under observation.

Let us see if in any way all these conditions may be fulfilled, and if so how.

In Figure 1 at the end of this article, let E be the eye to be observed, and L the source of light. Then will there be three positions of these two points and a third point O, the eye

of the observer, in which the first condition of the problem will be fulfilled. First; The eye of the observer at O, a point between the observed eye and the light. Second. The eye of the observer at O", a point beyond the light. Third In this position, the eyes of both observer and observed remains at the same places as in the first position; but the source of light is placed at L' a point beyond the observed eye. Now let us examine

each of these and see whether or not any one of them will fulfil the second condition of the Problem. Take the first position, with the eye of the observer between the eye of the observed and the light. It is manifest that in this position the eye observed will fall in the shadow of the head of the observer, and consequently will not have the light from L thrown into it as stated in the Problem. Take the second position with

the eye of the observer on the other side of the light. In this position we fair no better than in the first, for while the observed eye will be illuminated by the light from L, the observing eye will be unable to see it, for the light coming from L to O" will be so much more intense than that going from E to O" that the eye of the observer will be too much dazzled by it to be able to see the eye at E.

Take the third position. Now

it is evident that as in the first position the head of the observer obstructed the light so as to spoil the attempt, so also in this will the head of the observed do the same. For the eye will [illegible] in its shadow, and thus be in the dark. Thus we see that all these positions fail to fulfil the condition given. Could the head of either observed or observer be rendered transparent, either position, one or three would fulfil the conditions admira-

-bly. But such a thing is this we know to be impossible. Says, Dr. Edgar A. Browne of Liverpool, "If my youthful ideas of proportion are correct, it might have been possible for Gulliver to have studied the Brobdignagian retina without an ophthalmoscope, or for a Lilliputian to have studied Gulliver." Could we move the head of the observer out of the line R.L. as at O, we would violate the first condition of the problem, the three points not being in one and

the same straight line.
The suppositions made above include all, I believe, of the changes that can be made in the relative positions of the three joints R, L, and O. Consequently we are forced to the conclusion that it is impossible for us to see the interior of the eye by means of transmitted light.
Could we do away with the candle or lamp represented at L in the figure and by some means render the eye of the observer luminous, we would be

able to fulfil the conditions of our problem. Practically this is what is done by the ophthalmoscopic mirror. For the hole in it, thro which the light passes is equivalent to the natural pupil of the eye, and the silvered portion, to the parts surrounding this. These then are the principles of its construction, and the mirror alone, is really and truly the ophthalmoscope, and all additions to this, are simply aids. Just as the eye is our organ

of sight and we may aid it by the use of lenses, for ordinary work, as in the use of the microscope and ordinary spectacles; so in the use of the ophthalmoscope we may give great help by the use of proper lenses. The number, size and position of these will be considered when we come to speak of the forms of the instrument.

Let us now look for a few moments at the application of the Ophthalmoscope to practical use.

Thesis.

The Ophthalmoscope and Its Use.

by

Richard B. Norment Jr.

Class of '80.

The Ophthalmoscope and its Use.

In choosing a subject for a thesis, the author has had but one end in view, and that is self improvement. He has therefore endeavored to chose one, rich in interest, and importance; one, from the study of which he could not be benefited.

Among all the improvements of modern surgery, whether discovery or invention, few if any have exerted a more beneficial influence, than has the Ophthalmoscope, revealing as it does the secrets

of hidden recesses and aiding in the diagnosis of affections not to be otherwise pointed out. It seems to me that too little attention is paid to the use of this valuable instrument. For while in our large cities, there are a few eminent surgeons who make use of it to the benefit of their fellow men: the great majority of practitioners either know nothing of, or care nothing for its value, or at any rate are too dilatory to give it the requisite attention. In proof of this

assertion it may be stated in large districts of our own state the use of the instrument has as yet never been practiced even by the most eminent of the local physicians.

I believe that were the ophthalmoscope more universally used by the profession, there would be less trouble from diseases of the eye and more general success in their treatment. For by it, things veiled in mystery, and shrouded in uncertainty and doubt are made to shine out as clearly as

the sun in the sky.
For these reasons then I have
chosen as my subject, The
Ophthalmoscope and its
Use, and I submit, it humbly,
hoping that it may meet
with some favor in the
great minds of those to whom
it is most respectfully sub-
mitted.

When we consider the
great use of the instrument
as well as the simplicity of
its construction, we can not
wonder that such a vast
time should have passed a-
way before the discovery which

led to its invention.

From time immemorial & about the middle of the present century, it was regarded as impossible to see into the interior of the eye ball. And it was not until 1846, when Cumming showed that in certain positions of the observer and the deceased a luminous reflex could be obtained from within the eye, that the opinion of the medical world, or I should say the scientific world, began to change. It is said that the same observation was made

independently by Brücke and published in 1847; one of the many examples of two discoverers of one fact.

Cumming's early death cut short his labors and it was left for other minds and other hands to complete the work which he had begun.

About 1848 Mr. Babbage (Charles) took up the subject and constructed what is supposed to be the first ophthalmoscope ever made. Of this instrument Dr Carter says, "It left little to be desired". Notwithstanding the great eminence

of the author of this opinion it seems to me that the instrument of Babbage must have been a very imperfect one; for according to Dr. John Green, the instrument consisted simply of a mirror with a hole in it, an instrument by which the fundus of the eye may be lighted up as in the experiments of Cumming and Brücke, but which gives a view of the details of the fundus only under exceptional circumstances.
In 1851 Professor Helmholtz of Königsberg constructed an

ophthalmoscope, which is
still in high repute among
some authors, especially for
the examination of the fun-
dus by the direct method.
The reflecting portion of
this instrument consists
of three plates of unsilver-
ed glass, which reflect a
soft light, which is at the
same time polarized better
than by any other instru-
ment. The light reflected is
said to be strong enough
to show the details of the
fundus, without being so
strong as to dazzle the patient

or cause the pupil to contract. The Mirror of Helmholtz has been improved by later optician, by increasing the number of superimposed plates to five or six instead of three. It has never been my good fortune to see the instrument above described, but I would think from the description given in the books, and the fact that it is not to be seen in our instrument shops, that it was far inferior to the more modern instruments. Further, even those who give it such a good name do not claim

for it any value, save for examination by the direct method. The illumination must necessarily be very defective and this fact was recognized by Ruete shortly after the invention of the instrument. Not long after Prof Helmholtz made known his invention, Ruete improved upon it by reinventing the instrument of Babbage and adding a convex lens to form an inverted image of the fundus. All ophthalmoscopes now on the market, no matter what their name or price, are

Thesis

Subject — Diphtheria

by

J. Fussell Martenet

Respectfully Dedicated
to Prof. Wm T. Howard M.D.
Professor of Diseases of Women
and Children

University of Maryland
School of Medicine

Diptheria.

Synonyms,- Pseudo-membranous Angina; Putrid Sore Throat; Diphtheritis.

Definition;- Diptheria is a toxaemic, or dyscrasial affection, in which the morbid change in the blood has its main and characteristic local manifestations in the throat.

Causes;

The cause of it is very extensively agreed upon by authors, to be a vegetable parasite of the genus of bacteria; which is of four kinds, though only two has been found to exist in diptheria, and which has named Sphero-bacterium, or micro-coccus

and the rod-like bactrium, or micro-bactrium.

But some microscopic examinations of some authors, revealed the fact to them, that bactria was at times found to exist, and where no deposit occurred; and then when the deposit occurred, when bacteria was not present or was taken away. Some authors attributs the inflammation to the swift, incessant motion of the bactria, thus causing the irritation and inflammation, whilst others argue it is due to, a more subtle, yet undiscovered principle, which developes, and sustains in life the bactria, until it becomes organized into a fibrous tissue.

One author refers to cases between epidemics of the disease, in which Bacteria existed without a diphtheritic deposit, and was found existing in health on the gums and between the teeth without producing any characteristic irritation.

By the opinion of the author, as it may, it does not prove to any consideration the doubtfulness of the "bacterian theory," when we know the injection of it into the substance of the eye of animals, caused intense inflammation of the eye substance, with dissolution of tissue, loss of sight and the eye, and the death finally of the animal; and again, injecting bacteria,

other than micro-cocci, and micro-bacteria, was followed with a negative result, which alone should be enough to convince most minds of the true cause and nature of the deposit. Many authors opinions might be quoted "pro et con" the "bacterian theory," but it is a waste of time, and space, so I can but refer the reader to the many writers on the subject.

Next would come the consideration if it be local or constitutional primarily, and in this question there are many supporters on each side; yet the most generally supported is the one of local origin which in my own opinion, based upon

experience, reading, observation, etc, there is no question about, as is shown clearly enough in the fact, that diphtheria, if taken in the early stage may be arrested, and there will be no further development in any other part of the system; and on this question I offer no better authority than Prof Howard, of our school, who says emphatically it can, and such has been my experience and observation in the case of a fellow-student at the college, who had one very severe person examined, a patient suffering from it at a Hospital clinic, and who was treated, the early symptoms were arrested, and no further symptoms occurred.

This again is illustrated in the diptheritic deposit following a surgical operation in any part of body, and, if treated and relieved, no constitutional symptoms occur, and no other other part of the body will be attacked. Though I have seen a case of diptheritic opthalmia follow an attack of Laryngeal diptheria. It might be said, "Oh! may be you are not competent to diagnose a case of diptheritic opthalmia," but I do not hesitate here to discuss my ability for such a diagnosis, but merely refer it to our able professor of Opthamology, which could be a most illustration that it is primarily a local and then a constitutional affection

It is again shown in the manner of affecting the system; viz the fauces, nasal ducts, the mucous membrane of the eyes, or any incision of surgery, which may be considered one or all local manifestations; then fungi passing down the bronchi, inflammation is set up extending to the capillary bronchi, and still further, and pneumonia takes its turn; then the general circulation comes to the rescue, the poison is absorbed, thence to the kidneys to provoke an attack of desquamative nephritis; (as hereafter explained) and thence onward & upward to circulate in the brain, its fungi at-

tacking the seats of motor power of different organs and parts, thus producing paresis of organs, stoppages of functions as sequels; and in a way may be explained the cause and origins of bronchitis and pneumonia as complications of the fevers.

Contagion.

This would be the next question to be considered, and here again would arise numerous arguments "pro et con," as would when the primal cause is suggested. For Peters, Trousseau, Bretonneau, and other experimenters have repeatedly inoculated persons with the exudation of diphtheria, but in all cases with a negative result.

Then "au contraire", we have continually thrown before us examples of children, who have been playing with others, affected with it, taken suddenly, or eventually, and succumb to its effects. And in physicians and surgeons affected with it after operating for tracheotomy, or even making examinations of patients so affected. Like all troubles in which contagion is "sub judice", we find no one so willing as to expose himself to the possibility of an attack, if the malady be of malignant type.

If we but recall the proceedings in our own hospital, we find

a forcible illustration of the contagion of the disease, in the death of a former lecturer in our college, Prof Trick, who was operating upon a colored patient, for tracheotomy, on account of the closure of larynx by the exudation, and when he had penetrated the walls of trachea, the exudation was expelled with such force, as to be thrown over himself, and assistants, with the result, of the death of Prof Trick, and several assistants, of diptheria.

And again, in the case of a classmate, whom I attended this present session in, an attack, the attack being only attributed to the

careless examination of a patient
affected with it in a hospital
clinic, he not knowing the seri-
ity of the affection at the time, or
possibly being a skeptic on the
question of contagion. Another
class-mate was attacked by the mal-
ady, but he knew of no exposure
to an attack, and it may therefor
be supposed to have arisen "per ip-
se" in his case, if there be such origin.

The contagion is also exemplified in the family practice, when the malady attacks one member of it and 'ere its course is run, it has attacked more or less, all the fam-
ily, carrying possibly one or all of the family to the grave; and so

it may be called, as one author entitles it, the "Domestic Pestilence".

Incubation.

This disease, as in most others, has a period, in which the materies morbi lies dormant in the system, or in a part, called the period of incubation; illustrated in the following, - a person may be exposed, by nursing, examination, or otherwise to an attack, then in a few days he is attacked with malaise, nausea, and other symptoms of diptheria, when a true deposit will occur; then the period between the exposure, and the deposit is termed the incubation period, varying from one to ten or twelve days.

Varieties and Symptoms:-

Diphtheria may be of four Kinds, viz;- 1. Simple; 2. Croupous; 3. Ulcerative or Gangrenous; 4. Malignant; and which depends each for the varieties, upon the symptoms indicated.

Symptoms:-

Simple. In this, the patient will complain in a few days after an exposure, of malaise for a short season; then nausea, costiveness; enlargement of glands about the neck; then soreness of throat, and finally dysphagia; and on examination, we will find, a slightly hot & dry skin; somewhat hurried pulse; the tongue Red, dry and fur-

red; the back part of which and fauces and tonsils present a very red, turgescent and purplish-gray appearance, with great, sometimes excessive swelling. In a day or so following will be found a yellowish-gray deposit, which, if properly treated, will in a day or so, disappear, to be followed by convalescence. 2nd; Croupous,- In this variety there occure the most deaths, from the fact it involves the larynx, and is most common in children. It is the one most liable to follow, Scarlatina, Rubrola, etc. In it after the symptoms of this simple have existed for some time, or possibly suddenly, the throat becomes more

congested and uncomfortable, then a dark yellow brownish exudation of a membranous character, extending down the pharynx into the larynx, when we have what is known as diphtheritic laryngitis, which is said, by some recent writers, to be the one and same things as membranous laryngitis. We then have the regular symptoms of croup; the barking cough and voice; gradually becoming lower; breathing more difficult, and, at last, sibilant or whistling; when the patient is liable to become asphyxiated, if the membrane be not promptly detached, and expelled, at an early period, and the reformation of

the membrane kept in abeyance.
3rd, Ulcerative. This fortunately is not very common. In this form the membrane has become fully developed, you can see in addition ulcerative spots in different places especially upon the palate, and tonsils; rapidly ulcerating through with a putrid or gangrenous discharge, whence the old name of "Putrid Sore Throat."
4th, Malignant. This variety has the symptoms of the other several varieties, only in an exaggerated form; beginning with epistaxis, emesis, cephalalgia, and enormous engorgement of the cervical glands about the neck. The pharynx and

tonsils are covered with a yellowish deposit, rapidly changing to ash colored Brown, or even black, and emitting a fetid, odor. The tonsils and palate may then suppurate or even slough. Gangrene to the complete destruction of the entire tonsils, palate, and rupture through into the nose, and eustachian tubes, as was the case in a patient in my preceptor's practice. Extreme prostration marks this trouble from almost the very first of the attack, with clammy perspiration, coma, and then death comes to the relief of the patient.

Death may occur in the variety in from two to four or five days and

sometimes death occurs, while it is yet constitutional, and bfor the local manifestations occur, from the great prostration and complications, Complications.

Albuminuria is present in most all cases of diptheria, the simple cases showing a slight deposit late in the disease, but in the more severe forms, albumen exists in the urine almost during the entire attack.

The skin will show an abrasion over the diffrent parts of its surface, each particular (such) spot being generally covered by false membrane, in the course and origin of the local and constitutional symptoms

Endocarditis follows it sometimes, though very rarely, although it is so indistinct as to be overwhelmed by the more severe symptoms of the disease primarily. Heart, clot is sometimes concomitant from the fibrin becoming organized, in some part of the arterial system, and circulating to the heart, and when it does occur it will generally relieve the patient from the other sufferings.

Pneumonia is also an occasional, yet dangerous complication of diphtheria; from the fungi circulating in the trachea and bronchi, down into the capillary bronchi, thence into the lung substance, causing the congestion and engorgement.

Sequelae.-

These are long-continued debility; needing supporting remedies and regimen; owing to the dissolution of the fibrin, of the blood.

At times when patients are apparently in perfect health again, a relapse occurs, and occurs within a shockingly short interval of time.

Paresis of different kinds, occur, and especially those of motor function; the most common being that of deglutition, articulation, vision, and sometimes that of locomotion, being perfectly completely prohibited; from the "matrix morbi", after becoming constitutional affects the motor centres in brain.

Morbid Anatomy;-

The deposit formed upon the highly-injected, mucous membrane of the fauces and throat is the chief anatomical peculiarity of the disease. One author says, he has found the exudation present in the first form of diphtheria, in one or two instances. The false membranes of diphtheria, is said to vary in thickness from 1/20 to 1/8 of an inch; being composed of a fibrinous network, interlaced with epithelial cells, and exudation corpuscles, or "fey oid cells", there being forms of degeneration.

The bacteria is also said, to cause destruction of young exudation cells of the lungs, after infecting

the trachea and air cells, and thus into the circulation and lymphatics in excess; whence by mechanical means produces a stoppage of the circulation, exudation of serum and fibrous deposit; going on so far as the capillary circulation, disturbance of nutrition of walls, and even rupture of the same.

Muscular fibres, attacked by micro-cocci, degenerate and slough. In like manner micro-cocci appear heaped up in the uriniferous tubules and malphigian corpuscles of the kidneys; and occasion parenchymatous inflammation, and capillary embolisms of the glomeruli of the kidneys, with rupture of the cells, and

the formation of cells of epithelium in the urine; and in this way, may be explained, the cause of albuminuria as a sequel of diphtheria.

Pathology.

The pathology, of this disease, is at present, not yet understood, and therefore we refer the reader to the second part of the subject, namely,- the cause, etc of the disease.

Diagnosis.-

Diphtheria may be, diagnosed from scarlatina, by the absence of the eruption, and the peculiar punctated congestion of the throat, and finally, by the raised papillae of the glottis, constituting the "strawberry tongue.

In pseudo membranous laryngitis, the deposit always brgins in the larynx and extends sometimes down even to the bronchi, and always accompanied from the brginning with a hoarse, barking cough. Diphtheria brgins its deposit in the fauces and pharynx; seldom extends below the larynx; its fatality very commonly here occuring, and is never accompanied in the brginning with a cough. Croup has no albuminuria, and the regular of paralysis from diphtheria never attends recovery from it, that of croup does sometimes under proper treatment.

From aphthae and thrush diphtheria is known by the fact of there

bring vesicular, and much brighter in color; the constitutional symptoms also bring less severe. Thrush also begins in the mouth, and is much less common in adults than diphtheria, and is never epidemic.

Prognosis;

Simple form is not very dangerous to life; the puerperal is decidedly inclined to death by asphyxia; and the malignant type is fatal in a large number of cases. The simple may abort the more severe types by treatment and interruption; and here again, we take pleasure in introducing, as authority, Prof Howard.

Treatment.

Here we first consider the local and

then the constitutional.

1st, Local; Depletion is not advisable. Though leeches applied to the throat, do at times immense good; but even they must be applied with discrimination. Moderate purgation by means of the saline, and cholagogue cathartics, have pleasant effect in simple and croupal forms, but must never be given in the malignant, from the fact of the predisposition to diarrhoea.

Ice applied, and given, crushed to melt in mouth are good. Sprays of Aq Calcis, Vini Pepsin, Acid Lactic and Kalii chlorat, in solution, have been variously recommended by authors of ability, to dissolve the

false membrane.

Dilute Acids, Creasote dissolved in glycerin, Chlorine water, permanganate of potash, Lime water, dilute Carbolic Acid, Lemon juice, Tincture of Iodine, Nitrate of Silver, etc, have been used as gargles and local applications.

℞

Tinct Iodini ℥ss, Acidi Carbolici, Spts Vini Rectificatus aa ℥i Aquae ℥i has been highly spoken of by Dr Notz of Chicago, whilst Prof. J. Lewis Smith and Wm T. Howard each have faith in the following mixture, viz:- Acidi Carbolici gr v, Liq Ferri Subsulph ℥ii et Glycerinae ℥i. Dr. H. Reynolds admires the admix-

ture of Acidi Carbolici et Glycerinae
āā; all of which have used as
local applications. In excessive heat
of first stage ice compress; and in
the later stage, flannel wrung out
of hot water, with vinegar or Spts
afterwards applied will be pleasant
Constitutional; There is no spec-
ific for this disease, but we shall
enumerate many of the popu-
lar agents in the treatment. Tinct
chloride of Iron seems to be the most
valuable, Sulphate Quinia has
an excellent effect in abate the
febrile disorder, and is argued by
some to counteract and destroy the
bacteria; Chlorate Potassae has
many admirers, whilst Chlorate

of Sodium, which is more soluble, corrects the nausea, but which in disease acts, on the membrane equivalently with Chlorate Potassae, also has many supporters. These several seem to be the most generally used one in the treatment.

Then other salts of Iron; Chlorine water; Permanganate of Potassae, and many other anti-zymotic remedies have been recommended by many authors, as also Cubeba et Capaiba; and it may truthfully said every author, or practitioner have an individual remedy of their own. For my own part, I prefer the combination of Chlor. Ferri, Chlor Potas et Sulph Quinia, in a suitable menstruum,

a favorite of mine, being Ol. Theobr.
which by its insolubility in the
fluids of the mouth, clings close-
ly to the walls of the pharynx, thus
bringing the active ingredients of
the mixture, into more close contact
with them, for their local effect.

The diet must be of the
most concentrated and nutritious
character; giving stimulants, beef
tea, meat extracts, milk, whey,
brandy or milk punches in quan-
tities, and at the proper interval,
to suit the needs of the patient.

During convalescence the patient
must be well and warmly clad,
must guard his habits of expo-
sure, exercise, eating and drinking

Inhalations have been resorted to, but they are agents too mild to fight against so rapidly developing malady as diphtheria. Some authors speak of removing the membrane by incision, nitrate of silver, acids, actual cautery, etc, all of which are liable to make the membrane and part slough, and thus by persons they do more harm than good.

Tracheotomy is the "dernier resort," which will often be of avail, but it also may not always suffice.

But whatever you do, do, know what you are doing. Stop the ulceration and formation of the membrane in your observance, and

nature will, with your assistance, discard it, at her most convenient moment; and thus let your knowledge be the cure of the disease, and not your ignorance the death of the patient.

Thesis

Anaesthesia and Anaesthetics

by

Geo. W. Gillespie

Class 1880

Anaesthesia and Anaesthetics

In the following pages the author will attempt to give a short account of the history and use of Anaesthetics and a comparison of the two most generally used at the present day. Viz Chloroform and Ether. He has not lost sight of the fact that other agents may be, and have been used for the same purpose with more or less success, but the greatest question to be solved at present seems to be the relative value of these two.

History

While it is reasonable to believe that in all ages and countries

the prevention or lessening of suffering during surgical operations and under other circumstances of violent pain, has been an object of solicitude and research, the true history of Anaesthesia willfully produced, or perhaps it would be better to say attempted dates back only to the thirteenth century.

And even then little or nothing was accomplished. And it was not until the beginning of the present century when Sir Humphrey Davy discovered the anaesthetic properties of Nitrous Oxide gas, that any valuable solution of the problem seemed to offer itself. The

experiments made with this gas did not prove satisfactory, and its use was abandoned; except as an amusement; on account of the peculiar influence it exerted over the emotions. In 1844 another serious attempt was made to induce insensibility by inhalation during operations, and it is with no little pride that American authors can claim for their home and country, the honor of having established the use of Anaesthesia in surgery. In that year Horace Wells a dentist of Hartford made experiments with Nitrous oxide, some of which were successful, others not

and it seems that he abandoned the practice of giving it to his patients

In 1846 Morton a student of Wells used vapor of Ether as a substitute for Nitrous Oxide and extracted several teeth painlessly. Encouraged by this success he applied to the authorities of a hospital in Boston for permission to administer it to a man from whose neck Dr. J. C. Warner was about to remove a tumor. The result was as he wished and the operation was performed without suffering to the patient.

The news of so great a discovery spread with great rapidity, and experiments were no doubt numer-

-ous. Liston of London performed the first operation under its use on the other side of the Atlantic. His operations were done near the close of the same year in which Morton had made the discovery, and from that time to the present the use of anaesthetics in Surgery has been established. Of course the discovery opened up a field of investigation which gave ground for experimenters to hope that other agents might be found more powerful or reliable, or at least equally so. And in less than a year after Liston's first operation, Simpson of Edinburg announced the anaesthetic properties of Chlo-

-roform. Whether from a spirit of patriotism or a desire to exaggerate the achievments of their countrymen. we cannot say. but it seems that for some time after the discovery. Chloro-form was used almost exclusively in England. while Ether was used in the same way on this side of the water.

Time of course changed this state of things and both agents are now used on each side of the Atlantic and by the same men. Though at the present day Ether is given the preference by most Surgeons. at which time the question of relative danger of the two agents was sprung I do not know.

But this is certain that each has

had its advocates and still has.

Influence of Anaesthetics in Surgery.

The employment of Anaesthesia in Surgery says Erichsen is undoubtedly one of the greatest boons conferred upon mankind. And I feel sure he agrees with the world at large. Not alone to the patient is this a boon, but to the operation also. for we can not doubt that the sufferings of one undergoing a serious operation are of such intensity that they must appeal to the sympathies of the surgeon. and were it not in our power to remove these. the operation would doubtless often be foiled in no small degree by his own emotions. particularly would this be the case

with those surgeons who are some-
-what unnerved by the sight of blood
coming from a large wound, and not
alone on the removal of suffering on
the part of the patient and sympathy
on the part of the Surgeon depends the
great advantage of this powerful mea-
-sure. for the writhings of sufferers must
frequently have incommoded operators be-
fore the days of Anaesthesia. And it
would be expecting too much of human
nature to suppose that suffering, the
sight of blood, observation of those a-
-round &c would not excite horror to
such a degree as in a great measure
to promote the influence of shocks.
And indeed it is stated by authors

that before this time. it was no very rare occurrence for the patient to die under the surgeons knife. Still with all its advantages it is not an unmixed good. For while we can by the use of Anaesthetics remove great dangers we cannot do so, without at the same time entailing serious ones.

No agent that has as yet been discovered can be used for this purpose without to some degree bringing the lives of those who take it in jeopardy.

True it may be, that many, perhaps the majority of the cases of death following the administration of anaesthetics are due to carelessness or ignorance of those giving it. Still it can

not be doubted that deaths have occurred even when every precaution had seemingly been used to prevent such a result. Taking the advantages and disadvantages into consideration we are led to believe that the former decidedly outweigh the latter, simple inspection of statistics will not suffice to settle such a question, for even though the mortality lists were larger now than prior to their use (which happily they are not) it would not then be proven that they had not been advantageous: for operations too serious to be performed prior to this period are now performed frequently. And not alone in the preservation of life is this the case

ous also in the great successes of modern surgery in the saving of various organs. for example. the eye after cataract operations. limbs after compound fractures &c. Thus much for the history of Anaesthesia and its influence on surgery.

We now have to consider the state of the organism when under this influence, the agents used to produce this condition and the relative value of each.

First. What is anaesthesia

The term anaesthetic. was proposed by Dr. O. W. Holmes of Hartford to signify an agent that would produce Anaesthesia or insensibility to pain. While it is certain that these terms are rather

lacking in expressing the true state of the organism when under the influence of such agents as lessen the suffering in surgical operations and other violently painful processes, and while other terms. (Analgesia and Analgetics) have been proposed, still the terms above stated have such a firm hold upon the profession that they will doubtless be called upon to serve us in all time to come. In this condition there is not only loss of common sensibility to pain, but the organs of special sense are also affected, together with muscular relaxation and the abolition of reflex movements. To these last named conditions Anaesthetics

owe no small part of their value.

Second. The agents used to produce Anesthesia

I Chloroform. Chloroform used for this purpose should be of the form designated Chloroformum Purificatum of the U.S. Pharmacopoeia. It is a colorless volatile, liquid of a bland ethereal odor and hot, aromatic, saccharine taste. Its specific gravity is about 1,480 according to Bartholow, boiling point is 142° of Farenheits scale. it is slightly soluble in water, freely so in Ether and alcohol. It differs from the Chloroformum Venale or Commercial Chloroform in that when it is shaken with an equal bulk of officinal Sulphuric

Acid and allowed to stand for twenty four hours, no change of color is produced in either liquid, whilst when the commercial article is treated in the same manner it produces a mixture which seperates into two layers, the upper of which is colorless, the lower brownish at first - but becomes nearly black by standing.

Chemically Chloroform is the trichloride of the hypothetical radical Formyl. Its formula is $C_2H_1Cl_3$ and its molecular weight 119,5 (Stille and Maisch).

In its action Chloroform is rapid sure and effective. I believe that the ordinary opinion is that it takes from 3 to 4 minutes to bring an individual under

its influence. Though the only table of statistics on this point - that I have been able to find is that published by Prof. J. E. Erichsen of London in his valuable "Treatise upon the Science and Art of Surgery" and this was obtained from the records of but twenty one cases, It is as follows.

	m. sec
Shortest time taken to place under infl.	2.30
Longest " " " " " "	14.30
Average " " " " " "	6.24

From this table it would appear that some persons are decidedly more susceptible to its influence than others. and there can be no doubt from the experience of others that this inference is a true one. While I have

not been able to find any statement contrary to that of Erichsen as to the length of time taken to place one under the influence of the drug, and while I could not quote a higher authority than this able Author, still it seems to me that the average time is shorter than that above stated. As to the surety of its action. I have never heard, nor could I find a record of a case in which it failed to produce Anaesthesia, The quantity required for this purpose is not easily ascertained, but it must be variable to suit different cases. Thus in Erichsen: table taken from the report of a Surgeon in the

British Army. the following result is given.

Smallest quantity used in any one case ℥i
Largest " " " " " " ℥i
Average " " " " " " ℥iij. mjx

The average time under the influence being 12 minutes and 48 seconds.

The mode in which Chloroform acts will be considered when I come to speak of the relative value of this agent as compared with Ether.

II Ether

Ether used for anaesthetic purposes should be of the form designated Aether Fortior, Stronger Aether of the U. S. Pharmacopoeia. It is described as a clear, limpid, liquid ha-

-ving a specific gravity not exceeding 0.728. It is highly inflamable and does not redden litmus. When shaken with an equal bulk of water it loses about one tenth of its volume, which is dissolved in the water, while the remaining nine tenths absorb a small amount of the water. It boils actively in a test-tube half-filled with it and inclosed in the hand, on the addition of small bits of glass. If half a fluid ounce be evaporated on a porcelain plate by causing it to flow to and fro over the surface, a slightly aromatic odor is exhaled as the last portions pass off, and the surface is left without taste or smell, but

covered with a deposit of moisture.
Chemically Ether is the Oxide of the
hypothetical radical Ethyl. Its for-
mula is $(C_2H_5)_2O$ (Stille and Maisch).
Its molecular weight is 74 (Ibid)

Action of Ether

The action of Ether as an anaesthetic
agent is rapid, sure, and effective in the
majority of cases; though some cases
are on record in which it failed to
produce this effect. As regards the
length of time taken to bring one under
the influence of ether, authorities differ.
Thus Carter of St. Georges Hospital Lon-
don, states that the average time is
from 3½ to 4½ minutes in his hands.
This seems to me a remarkable state-

-ment, for I do not recollect seeing anyone come under its influence so quickly as this, and I have frequently seen it administered. Erichsens table gives the following result for this agent.

	m.	sec
Shortest time to bring under influence	3.	30
Longest " " " " "	24.	00
Average " " " " "	8.	10

Such a discrepancy between two authors of such repute as these gentlemen would lead us to suppose that there must have been some difference in the quality of the anaesthetic used, but Erichsen states that the Ether used in the cases on which his reports are based was carefully analysed and found

to be perfectly pure. Again as to the amount of Ether sufficient to produce Anaesthesia these Authors differ as widely as they do in point of time. Thus Barker states, one ounce is used in a quarter of an hour, while Erichsen's Table gives the average time under its influence in twenty six cases as 19 minutes and 6 seconds, the average quantity used being five ounces and one drachm. I stated above that cases are on record in which it was found impossible to produce Anaesthesia by the use of Ether, but such cases are of very rare occurrence. The mode of action of Ether will be considered along with that of Chloroform.

Third. Relative value of these agents.

In the consideration of this part of the subject it will be necessary for us to examine into those points wherein these agents differ in their mode of action, or the degree of action exerted by them. We will take them up together noticing differences as we proceed. It will then devolve upon us to choose between the two.

I Mode of action of Anaesthetics

The inhalation of anaesthetic vapors is retarded at first by the fancial irritation produced by them. cough following this, secretion of mucus in the throat, and the reflex act of

swallowing. Sensibility of the glottis is soon diminished and the inhalation goes on quietly.

The first effect is a general mild excitation with all the signs of cerebral intoxication. In both these regards, Chloroform and Ether differ.

The facial irritation is less and the period of excitement shorter under the influence of Chloroform than that of Ether, though of course they vary very much in degree in different individuals. During this stage the patient may be aroused, though there is great diminution of sensibility to pain, the sense of touch may be preserved

Taste and smell are abolished, and the sight is either abnormally acute or perverted by illusions.

Following this comes a period of complete insensibility. It is said that in very robust subjects this stage is preceded by a stage of tetanic convulsions, in which the voluntary muscular system, and the respiratory muscles become rigid, the breathing stertorous, and the face cyanosed. Following upon this we have the stage of complete muscular relaxation, and the abolition of reflex movements. During this stage the functions of the cerebrum are suspended, only the

lower centres presiding over respiration and circulation continuing in action. If the inhalation be continued uninterruptedly during this stage these functions may also be suspended and death be the result. As regards the difference between the actions of these two agents, it is rather in degree than in kind. It is generally admitted that chloroform is the more powerful of the two agents, though even this is denied by some. Still even taking the statement of Carter whose views on this subject seem almost practical to me, we can have no doubt as to the greater power of

Chloroform. The number of deaths reported to have followed chloroform narcosis now amounts to hundreds, while those following Ether narcosis is very small. Thanks to the condition of the organism during the process of parturition, chloroform seems to be harmless when properly administered under the circumstances.

III Which should be used?

In answer to this question most Surgeons would say Ether, most Obstetricians, Chloroform. Among all whom I have heard speak upon this subject and all authors I have read, I find but one who deems chloroform of no more danger than Ether. And while

that one is a Surgeon with but few equals and no superiors. I can not help thinking the weight of authority is very much against him.

Still there are some circumstances under which we can use Chloroform with as good results as Ether, and there are many circumstances under which it is more convenient, thus in country, military, and rural practice, as well as in parturition, its lesser bulk, its non-inflammability, its speed and surety of action, its comparatively agreeable odor and flavor, all would lead us to choose it. In all operations at night it seems as though it were better to use Chlo-

-roform, and also in those cases in which there is any likelyhood of it becoming necessary to use the actual cautery in the neighborhood of the air passages of the patient.

In nearly all other instances it seems to us that it would be better to use Ether

. Since writing the above the author has had the privilege of witnessing an experiment made with another, and a new Anaesthetic agent; the Bromide of Ethyl. If one experiment would be sufficient to fudge of the merits of this agent, and that had been the one performed

by Prof. Christopher Johnston at the Baltimore Infirmary on Feb. 9th 1880. we would be compelled to say that this agent will ultimately do away with the ones we have considered.

The subject was a young colored man of tolerably stout build, about five feet nine inches in height.

Only one drachm of the agent was used. There was some slight excitement at first which lasted only a very few seconds. Anaesthesia was produced in One minute & forty two seconds, the pulse and respiration remained unchanged, consciousness returned in three minutes & forty five sec. the patient arousing as from

healthy sleep, at this time he rose from the table, but felt giddy, was again placed in the recumbent position, after remaining in this way for a few minutes, he rose and walked away saying he felt "all right".

I have thought it fit that I should make a note of this experiment without further comment.

A

Thesis

on

Glycosuria - Diabetes Mellitus.

by

Theodore W. Schaefer.

January, 3rd 1880.

Read not to contradict and confute, nor to believe and take for granted; nor to find talk and discourse; but to weigh and consider. —

Bacon.

Glycosuria – Diabetes Mellitus.

Definition; Synonyms.

The appellation glycosuria is employed to designate the presence of grape-sugar or glucose in the urine. In this affection the urine is increased in amount.

The terms diabetes mellitus, glycohaemia [denoting a saccharine condition of the blood, is to be preferred to either to indicate the pathological condition], melituria, etc, are all used to signify the presence of grape-sugar as pathognomonic of diabetes. The presence of glucose is to be considered as a symptom of various diseased conditions; it is not an individual affection, since there are other important

symptomatic events which make up the clinical history of the disease. It would be exceedingly barbarous to denunciate the affection as functional; this would be certainly a grave error. I do not believe in functional diseases. I believe that the terms functional and spontaneous are a real superfoetation of names used in medicine; it is obvious that they explain very little indeed. In expressing the opinion that this disease, as well as many other diseases, is functional, and we know how often we do so to conceal our ignorance, we only express our want of knowledge of the precise cause. But, when the study of pathological anatomy becomes further developed, is studied with a little more precision, and as more exact investigations into structure and composition are entered upon, so the class of so-denominated functional diseases

becomes more limited. Knowledge is always progressive, says an eminent writer; so is it also here. We must try to banish some of the many mystery full doctrines of medicine, which are inherited to us from times immemorable. We all think, believe, do, despite all ordinances to the contrary. What appears to us mysterious, an inexplicable problem, and seems to be "obscure", if I dare term it so, will be perhaps elucidated by the able researches of scientists. We are living in our days in the greatest epoch of medical achievements. The medical art of our day affords us excellent opportunities to display her abundant resources. Suppose, ~~for instance~~, that Hyppocrates, Galen, Paulus Aegineta, Aëtius, their predecessors and contemporaries, would visit our world, would they not be astonished, delighted, nay, would they not even wonder and gaze at the skill,

the erudition, and the achievements of this sublime generation of physicians and surgeons.[2]

Anatomical Characters.

The true seat and nature of the disease are not yet clearly elucidated and established. For convenience' sake the affection is placed into the category of urinary diseases. Abnormal conditions of the kidneys are frequently met with, sometimes not; they are generally enlarged, sometimes with, sometimes without, structural lesions. By some the disease is considered as a neuropathic affection, since cases have been reported in which microscopical investigations have appeared to reveal lesions situated in the floor of the fourth ventricle in the medulla oblongata. All secretions, excretions, all liquids, the circulating blood, etc, contain glucose.

Clinical History

The most constant and striking symptomatic phenomena of glycosuria are the increased excretion of urine, and the presence of glucose in that fluid.

The disease attracts at first the attention of the patient, to whom the acts of micturition appears too frequent, and he cannot account for the large amount of urine passed. The urine has a saccharine taste and smell, is generally acid in re-action, is of a high specific gravity, and is often deficient of the natural coloration. The constituents are not abnormal in amount; but the urea is more abundant in the urine than in health. The urine is apt to cause a burning sensation and a feeling of intense pain as it dribbles on the excoriated surface of the genitals; hence a variety of skin-affections often so generated.

Pruritus is the most prominent. Ulcers, boils, carbuncles, furuncles, etc, torture the patient.

Thirst is a prominent symptom. It is always present in this disease. Water is taken in an enormous amount. The mouth is dry; ulcerations sometimes occur. The breath has a saccharine smell. The saliva is acid. – The appetite is increased. The increased appetite is due to a perverted activity of the chylopoietic viscera. The patient takes a large amount of nourishment in the beginning of the disease; but as the disease advances, dyspeptic ailments occur. The digestion becomes obtunded.

The perspiratory function is depressed. The skin feels dry and cold. – Vision is sometimes implicated. The mental faculties gradually deteriorate at last. The sexual propensities are extinguished. Nervous symptoms sometimes occur. The patient generally

dies of some intercurrent disease, e.g, pulmonary phthisis, pneumonitis, etc. Pulmonary phthisis is developed in a very large number of patients, and can be considered as one of the terminal appearances of the disease.

Recapitulation: The disease is insidious in its development, and we do not know of any prodromic symptoms. Emaciation is a marked feature in this disease. The vital forces are brought below par. In one word: this is a wasting disease.

Pathological Characters:

The pathology of glycosuria is obscure. Claude Bernard considers that the affection is due to a hypergenesis of sugar by the liver,

dependent on some morbid excitation received through the nervous system. Mialhe attributes the deficient destruction of sugar to a want of alkalinity of the blood. The most rational explanation entertained by some is the following: The production of sugar is one of the functions of the liver. As the sugar passes through the lungs it undergoes no metamorphosis as it should do, that is, the sugar should either be decomposed into water and carbonic di-oxide, or it should be converted into lactic acid, this acid combining with soda, lime, and potassa, forming lactates, and these are again converted into pneumates as the blood

circulates through the lungs. This is the opinion entertained by Robin and Verdeil. It seems to me the most rational.

The production of sugar is increased under the following conditions. These are not to be considered as pathological; they are not permanent.

I. Claude Bernard, the eminent French physiologist, discovered the remarkable fact that a saccharine condition of the blood and urine may be induced by irritating the medulla oblongata near the origin of the pneumogastric nerves.

II. A saccharine condition of the blood and urine results by increasing the circulation of blood through the liver. Harley injected irritating fluids into the liver, and found the presence of glucose in the urine.

IIII. A diabetic condition results by increasing the absorption of an abundant supply of the saccharine principle.

Von Becker observed that when concentrated solutions of sugar are introduced in large amount into the intestines of a rabit, the saccharine principle may subsequently appear in the urinary excretion.

But the sugar is only a temporary, not a permanent, appearance in the three instances above referred to. But when the presence of the sugar is permanent in the human subject, it indicates the irrecoverable disease known as glycosuria or diabetes Mellitus.

Etiology.

The etiology of this disease is obscure. It is exceedingly difficult, in the present state of our knowledge, to trace the patho-genetic influences pertaining to age, habits, diet, climate, etc.

We are informed that men are more sub-ject to this disease than women.

Glucose is found in the urine, as has been reported by some observers, whenever patients received injuries to the head, especially to the posterior part, the occiput.

I have stated that glycosuria occurs sometimes with other pathological connections. Sugar is sometimes found in the urine of patients affected with septic poisoning. The perspiration has a peculiar saccharine smell.

Gibb and Johnson have found sugar in variable quantities in almost every case of hooping-cough (pertussis). This is probably due to an irritation of the pneumo gastric nerves, which are somewhat concerned in the glycogenic function of the liver.

M. Blot was first to discover the presence of sugar in the urine of puerperal women as a physiological phenomenon connected with lactation.

A trace of glucose occurs after violent mental emotions. After the inhalation of chloroform, ether, etc, sugar may be detected in the urine. Whenever a large quantity of sugar is taken into the system, and as the hepatic tissue is only capable of converting a given proportion

of the saccharine principle into glycogen, so does a surplus quantity pass away unchanged into the general circulation, and may be detected by appropriate chemical re-agents.
All these conditions here enumerated are all transient affections, and have no pathological importance.

Prognosis.

The prognosis of this disease is unfavorable in a large majority of cases. This disease affords very little encouragement as regards to permanent recovery. The prospects of permanent recovery are lessened if the condition be a persistent one.

Recoveries have undoubtedly taken place, but these form a small number.
The sugar may be proportionately diminished, brought even to a minimum, or it may disappear for a short time entirely.
But the patient's urine will eventually contain sugar again, and he will slowly waste away and ultimately die. The patient is generally carried off by some complication. The intercurrent affection is generally phthisis. A grave prognosis is formed whenever there is general emaciation, phthisis, disease of some vital organ, etc.

Diagnosis.

The presence of a small proportion of sugar

in the urine is not to be considered as an evidence of the existence of this grave disease. I have mentioned under what conditions the urine will sometimes contain glucose. I have found sugar in the urine where there was no evidence of any serious affection at all. The temporary presence of sugar in the urine is probably depending on some unknown disturbance of the circulation. After the ingestion of a large amount of amylaceous food, the urine shows a notable presence of glucose.

Following tests will enable the Physician to determine the presence of sugar or glucose.

1.) It should be tested whether it be of a high specific gravity by the urinometer; a high specific gravity may indicate the presence of sugar.

2.) The urine should be tested with a test-paper; saccharine urine is generally acid or neutral in re-action.

3.) Chemical re-agents should be used to test the presence of glucose; one test only should never be used as a demonstrative proof of the presence of glucose.

The "fermentation test" is a valuable test for the presence of sugar. Cristison states that a cubic inch of carbonic acid formed in the fermentation test represents a grain of sugar. Boil the saccharine urine with a little of Fehling's liquor; a reddish-yellow coloration indicates the presence of sugar. Boil the urine with a little caustic potassa; a yellow-, then a brown, and at last a black-brown coloration results if sugar be present. Fehling's liquor test, I think, is the best test to demonstrate the presence of sugar in the urine, and is the most simple.

Treatment.

In the present state of our knowledge, when the etiology and the pathogenesis of a disease are unknown to us, it is astonishing to see how various, I might say contradictory, our treatment often is.

A variety of remedial measures have been used, with theoretical presuppositions, and but a few are of any true utility. We must remember that we have to treat an exhausting disease. It would be certainly a vague idea to attempt to use such measures, heroic, as they are sometimes called, which only tend to impoverish, vitiate, and bring the vital forces below par. Mial he considers that the alkalies are among the useful remedies. He supposes that the alkalies are deficient in amount in the blood. The alkalies tend to decompose the superabundant sugar in the blood

Among the useful and best preparations of the alkalies are the bicarbonates of sodium and potassium. These salts may be taken in an effervescent form. Some of the alkaline mineral waters are highly beneficial. The citrate of ammonia has been used by Camplin. Under the use of the alkalies the urine is decreased in amount; the amount of sugar is notably diminished. The preparations of opium, belladonna, cannabis indica, etc, are useful in some cases to decrease the amount of sugar and urine. Bromide of potassium and chloral, lately apiol, may be used to allay nervous irritation.

The tonic and analeptic medication is of prime importance. The patient should be put upon a general tonic treatment. The patient may live for sometime under this treatment.

The preparations of iron, cinchona, various bitter tonics, and some of the mineral acids, are useful. Cod-liver oil is very beneficial. Stuychnia has a most wonderful power of producing a marked diminution of urine excreted holding sugar in solution. The use of saccharine and amylaceous food should, as far as possible, be interdicted. All kinds of meat should be taken. The best nourishment is milk. Vegetables not containing sugar are admissible. A kind of bread, deprived of starch, has been used by Camplin as a substitute for bread.

Nutritious food is of prime importance, our object being to nourish and invigarate the blood of the patient. He should have good food and plenty of it. The skin should be kept healthy and moist. A change of climate is highly advantageous. - - - - - - -

Recapitulation of Treatment.

Our prime objects of treatment of this disease should be, to invigorate the health and to prolong the life with appropriate measures.

These measures are:

1.) A nutritious alimentation.

2.) The use of tonics and stimulants to increase and invigorate the functional activity of all organs connected with life.

3.) To increase the assimilative functions, consisting of excercise in the air, recreation, change of climate, and cheerful surroundings.

Finis.

A Thesis

on

Scarlatina.

submitted to the

Faculty of Physic

of the

University of Maryland,

for the

Degree of Doctor of Medicine

by

Burton M. Spencer,

Franklinville, N.Y.

[illegible]

Scarlatina.

Three varieties, Scarlatina [illegible] anginosa, and maligna.

It is a febrile disease produced by a specific poison which is reproduced in the system during the course of the disease. Characterized by a scarlet efflorescence which first appears on the fauces and neck and afterwards over the whole body, and terminates in desquamation about the seventh day.

The period of incubation is [illegible] days which is succeeded by the primary fever lasting from one to three days and is manifested by a distur[illegible] [illegible] the [illegible]

pleurae, or pericardium, [illegible]

[illegible]

The inflammation of the throat [illegible]

[illegible] the [illegible]

reach the [illegible]

and destroy it together with the

[illegible]

may occur [illegible]

The mild attacks are nearly as liable

to these complications as the more

severe. Sometimes ulcers form in

the throat and discharge excessively,

[illegible]

[illegible]

and elevated, projecting through

the white coating, giving the charac-

teristic strawberry [illegible]

[illegible]

[illegible]
by innumerable small small red
puncta [illegible]
to an efflorescence, The skin in
[illegible]
But later becoming of a darker
red

The anatomical changes in the
skin is [illegible]
[illegible]
[illegible] the skin. In the [illegible]
rarely the skin is more of a [illegible]
hue. The redness is greater at the
[illegible]

[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

sometimes before, albumen may [illegible]

[illegible]

[illegible]

[illegible] There are three stages first from [illegible] of disease to the appearance of the [illegible] generally [illegible] days, second, [illegible] from [illegible] days. Third [illegible] the [illegible] to be [illegible] of the disease. Third stage [illegible] The first stage [illegible], anorex [illegible] lassitude and [illegible] the [illegible] Before [illegible]

[illegible]

high light colored, containing
on the abdomen traveling upward.

[illegible]
The mucous membrane [illegible]
excoriated and bleeds on the
slightest excoriation. Tendency to
deep ulcerations and sloughing.
The [illegible]
[illegible] that [illegible]
been known to [illegible] take [illegible]
hours. Thus one case in which [illegible]
[illegible] took place in twenty [illegible]
hours from commencement of attack.
The patient seems overwhelmed
with poison at first raving and
violent soon sinks into stu-
[illegible]. The [illegible]
[illegible] small irregular
respirations [illegible] and [illegible].
The passages of the [illegible]

is traceable to Arabia.

from it between the ages of one and three years. It is rarely met but once in the same person.

[illegible] asked [illegible] measles by shorter primary fever, [illegible] catarrh, [illegible] and eruption earlier commencing by [illegible] scarlet. In roseola the eruption is confined to the chest [illegible] than in measles.

[illegible] disease [illegible].

Most fatal in children under five. [illegible] more fatal in cities than country. [illegible] fatal [illegible] in abortion [illegible]

[illegible]

is to be recommended. For the [illegible]

thirst [illegible] may be used [illegible]

[illegible] patients [illegible] or [illegible]

especially if it be diphtheritic

"If there is much excitement of

the system depletion cathartics

are to be given; if nausea and

vomiting prevail a sinapism is

of service. If the discharges

from the rectum are acrid and

acid, with acidity of the stomach

magnesia is preferable if there

is abdominal pain castor oil

and opium, (Wood.)"

Should there be headache and

congestion of the [illegible] the

[illegible] of the face diaphoretic

[illegible] found
in the urine after desquamation
commences, and if the urine [illegible]
scanty and highly [illegible]
dropsy should be looked for.
Should the synovial membrane
of the joints become inflamed
and swollen all stimuli
should be withdrawn and
nervous sedative may be
needed. The bowels should
be kept open.

Most cases of scarlatina
would recover without medical
interference.

The peculiar symptoms
each case should be studied
and met by proper treatment.

[illegible] Persons not affected should be kept apart from those suffering from the [illegible] and the apartments thoroughly disinfected with Carbolic acid spray and other disinfectants. Belladonna in minute doses has been highly recommended as a prophylactic, as has also hyposulphite of soda, but the utility of hyposulphite of soda or belladonna is very much doubted.

From evidence given and from my own observations I should use Belladonna until farther experiments prove it useless.

Thesis

Typhoid Fever,

by

Harry C. Sutton

Feby 1880.

University of Maryland.

In writing a thesis the first diff-iculty which presents itself is the choice of a proper subject, and [illegible] comes the [illegible] division of [illegible].

The [illegible] typhoid fever, [illegible] of [illegible]; as "Typhus" "[illegible] fever" [illegible] "typho-malarial fever".

Typhoid fever is not confined to any particular place or locality, occurring [illegible], [illegible] the Autumnal months, both sexes are equally liable to this [illegible], age is predisposed to it in a marked degree; [illegible] are seldom attacked [illegible] between the ages of fourteen and twenty five. the disease is quite common; after the age of twenty five the disease, it is stated, progressively diminishes, and, after the age of [fifty?], it seldom occurs.

It is [illegible] caused by some specific germ or miasm; the [illegible] ing causes are "old sewers [illegible] houses and imperfect ventilation", the excrements of the patient, it is believed, are loaded with the germs of this disease; hence, great care should be taken as to their disposal. A great many interesting stories are related of the different modes of its communication, from one neighborhood to another by means of water milk and similar vehicles.

The best authorities now agree that Typhoid fever is a contagious disease "Idest" may be communicated by contact. The period of incubation is about two weeks; one attack generally gives immunity from another; although [illegible] from the first attack are [illegible]

Anatomical characters.

The special lesions are situated in the patches of Peyer, and also in [illegible] glands of the small intestine and [illegible] [illegible].

First "Enlargement of [illegible] [illegible]" and "solitary glands" [illegible] membrane covering the glands becomes of a [illegible] [illegible], and the corresponding [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Second "Sloughing away of the glands, and [illegible] membrane" Sloughing commences in the [illegible] glands [illegible], and is probably due to an arrest of [illegible] [illegible].

Third Ulceration [illegible] [illegible] sloughing.

[illegible] [illegible] [illegible] [illegible]

Perforation of the intestine occurs as the result first of ulcer [illegible] of rupture caused by sloughing [illegible] intestinal perforation we have associated symptoms [illegible] acute peritonitis

There are no constant relations between the intensity of the symptoms of the disease [illegible] the solitary glands of the large intestine are frequently involved [illegible] glands are [illegible] sometimes attain a size [illegible] [illegible] sloughing [illegible] takes place and the peritonitis [illegible]. The spleen [illegible] to a greater [illegible] congestion [illegible]

Course of
As a rule

The symptoms of the [illegible] are [illegible] headache, [illegible] and [illegible] anorexia, [illegible], [illegible], [illegible] lapis, pains in lumbar region as a rule looseness [illegible], [illegible] increase of these symptoms till patient takes to bed. [illegible] generally more or less flushed, slight capillary congestion [illegible] hands [illegible], though [illegible] as in typhus. About [illegible] delirium generally [illegible] in a [illegible] late [illegible] is difficult to obtain rational answers; [illegible] for food, or drink although he may be thirsty although as a matter of fact he usually is, but owing to his mental condition he does not make his wants known. [illegible] to arise from [illegible], generally easily restrained occasionally [illegible]

[illegible] [illegible] [illegible] [illegible] and [illegible] in bed and not seem to be aware of it.

Lub sulfus tendinum slipping down in the bed. Picking at the air and Coma vigil, these as a rule are [illegible] dangerous symptoms. Coma vigil may be followed by true coma. [illegible] and muscular rigidity are rare, and indicate a fatal termination. The [illegible] is generally of a low muttering grade, occasionally violent.

The Tongue is always more or less [illegible]. It may be a "whitish yellow" and [illegible] it is dark when the coating gradually [illegible] and the [illegible] moist [illegible] is [illegible] of [illegible] is sometimes met with. In some cases when the patient is requested to extend his [illegible]

ness of mental action. Sordes are present in grave cases after first week. In cases of this character marked tenderness and redness of the gums. There may be bleeding and sometimes vomiting. Diarrhoea is frequent. But constipation may exceptionally be met with. Haemorrhage from [illegible] [illegible] occur [illegible] the [illegible] tympanitic. Tenderness in the [illegible] region. Perforation of [illegible] [illegible] takes place. Often when from the accompanying symptoms one [illegible] [illegible] [illegible] the intestinal [illegible] [illegible] [illegible] they do not occur at all or only slightly. Peritonitis may take place with or without intestinal perforation when it occurs from perforation [illegible] [illegible]

The eruption occurs in [illegible] [illegible] cases [illegible]

[illegible] It is not [illegible] related. But papers and some authorities state that the eruption can be distinctly felt. Prof Chew is of the opinion that [illegible] is impossible and this view is strengthened by the fact that no one has ever [illegible] the eruption could be felt [illegible] The Eruption is of a rose color They are few in number generally limited to the trunk and disappear on firm pressure They may be presented by a [illegible] [illegible].

Bed sores may occur from continued pressure A cough is not of frequent occurence [illegible] due to Bronchitis or congestion of [illegible] membrane; Pneumonia is a [illegible]

When the [illegible] rises to one hundred and twenty [illegible] the temperature is as high as 106°, [illegible]

against the patient [illegible] be watched closely through the course of the disease.

The temperature is [illegible] morning and lowest in the morning rising during the day, till it attains its maximum point. One characteristic is that in the morning it is [illegible] than it was on the previous night, although not as low as it was the morning before. The temperature usually attains its greatest height at the seventh day, gradually decreasing in favorable cases. The urine is scanty and high specific gravity; Albumen is often present. Occasionally Renal casts are found. Retention sometimes takes place

Relapses are not of unfrequent occurrence and are often followed by

fatal results, thus seven cases reported by Prof Pfeufer of Munich death took place in four cases. "After death two sets of [illegible] were found in the intestines, corresponding to the attacks of fever."

Diagnosis

This lies between Typhus and Remittent fevers. Flint. The principal points of diagnosis are First season of the year. Second age of patient Third gradual formation of the disease Fourth the absence of remissions, Fifth abdominal symptoms. Sixth Epistaxis Seventh temperature in other words the state of the body with respect to sensible heat. Eighth Eruption, The Bowels are as a rule loose and the disease presents a gradual rise of the temperature, the abdomen is tympanitic, the [illegible]

is sensitive to pressure in right hypogastric region. The characteristic eruption is generally present after the second day of the patients confinement.

The disease might be confounded with acute intoxicants, but for the fact that the early active delirium the presence of constipation, and absence of tympanitic abdomen, symptoms of the former disease point conclusively to something else than Typhoid; it may also be mistaken for enteritis especially in children and sometimes for pneumonia.

Prognosis.

As a rule, good; provided the patient can have good nursing, and prope hygienic surroundings, an increase of temperature above 105°, is an unfavorable symptom; when the patient dusk

is generally from some complication, and rarely from the intensity of the disease itself. Coma, picking at bed clothes, Subsultus tendinum, sliding down in bed are grave symptoms and generally indicate death. The prognosis [illegible], should be guarded; on account of the liability to complications; a considerable rise of temperature, below the minimum of health is extremely unfavourable. Means of abortion which generally occurs in connection with pregnancy associated with Typhoid fever death always takes place

The death rate is [illegible] than one in fifteen

Treatment

(1) Typhoid fever is a disease which is self limited, [illegible]

although it has been [illegible], tried, has not as yet [illegible] successful, the principal indications seem to be to use the means that will tend to take the patient safely through the crisis; and to accomplish this we are to treat symptoms as they arise, and complications as they present themselves, Thus in the early stage of the disease if constipation is present, the use of a mild purgative is indicated, and probably one of the best is the [illegible] powder or an enemata, on the other hand if diarrhoea is very persistent, it may be best to control it by the use of opiates and astringents, The temperature [illegible] be kept down by large doses of Quinine or, [illegible] at Bellevue Hospital whilst attending [illegible]

used [illegible]
shows a disposition to clean off [illegible]
in flakes; its curative [illegible] must be
directed against the intestinal ulcerations,
[illegible] covering [illegible] to
granulate and heal.

As soon as the [illegible] is [illegible]
diagnosed the head [illegible] be [illegible], and
if headache is present, cooling lotions the
ice cap or cool [illegible] should be [illegible]-
ed, coma vigil should be met with
opium and the [illegible] of [illegible],
should be met with Bromides and [illegible]
If Peritonitis takes place either with or with-
out perforation the use of opium and
stimulants is called for. Blisters and local
bleeding should not be [illegible] if Per-
itonitis is due to perforation death will
inevitably follow. Haemorrhage from the

Bowels, if [illegible] [illegible], [illegible], [illegible] [illegible] [illegible], Stimulants [illegible] [illegible] [illegible] operation. When to use stimulants

"[illegible] [illegible] [illegible] indicate, [illegible] [illegible] [illegible] [illegible] heart and elevate the [illegible] [illegible]. [illegible] harm when the pulse [illegible] [illegible] [illegible] blood [illegible] [illegible] [illegible] [illegible] [illegible] continuance is [illegible] [illegible] [illegible] [illegible] [illegible], and [illegible] [illegible] [illegible] [illegible] and [illegible]." And [illegible] [illegible] [illegible] [illegible], [illegible] to [illegible] [illegible] [illegible], furthermore, [illegible] stimulants [illegible] [illegible] [illegible] food to be taken and [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] continuance of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

milk, eggs, [illegible] suitable [illegible]
(Barthelow) If uraemia takes place, [illegible]
diaphoresis is to be brought about, the [illegible]
should be examined frequently, in order to
see that [illegible] of the [illegible] [illegible]
place of this [illegible] should occur the
bladder should be [illegible] by means of [illegible]-
eter. Epistaxis is sometimes so persistent,
that [illegible] nares have to be [illegible]

If pneumonia is present with typhoid
the general principles applicable to the
treatment of [illegible] [illegible]
but Blisters and nauseants should be
avoided. Generally [illegible] depends on [illegible]
nursing, [illegible] hygienic [illegible]
[illegible] diet than on the medicines administered.

The [illegible]
in the [illegible] ought not to be [illegible]
to reach more than 60°. [illegible]

acidulated drinks should be [illegible]
Care should be taken not to give too large quantities at a time

The diet should be of a liquid form and of a [illegible] nature, and should be given at intervals of every two or three hours. Beef tea, milk, animal broth, and farinaceous food are indicated. The patients should not be allowed to leave simply because he fails to ask for food.

As soon as convalescence is [illegible] solid food should be allowed, and during convalescence alcohol should be given very guardedly; small liquors, or wines are preferable during this stage

A Thesis

To the Faculty of Physic

of the

University of Maryland

Medical School

Transfusion of Blood

and

its practical application

By

J. H. Drach.

Hempstead Md.

Gentlemen:- That there is nothing new under the Sun is a maxim the truth of which is confirmed by researches into almost any branch of our profession, and the first suggestions of that which I am now about to point out to you as a new and valuable operative procedure may almost, without exaggeration, be said to be as old as the hills, as may be seen by the following history of the Operation.

History:- Transfusion is mentioned

in the Metamorphoses of Ovid; to the Sorceress Media being attributed the power of renewing youth by injecting youthful blood into the veins of the aged, and there seems to be some ground to believe that the operation was at all events practised among the Egyptians, Greeks, and Romans; which if we are to believe a Jewish manuscript quoted by Dr. Ore of Paris. it was actually practiced in the case of one of the Princes of Assyria. If then we accept this as the first recorded case the second would be that of Pope Innocent the 8th. who was afflicted with an habitual torpor from which his Jewish physicians tried to arouse

him by successively injecting into his veins the blood of three young men. all of whom died together with the aged subject of the Experiment. Libavious in 1615 notices transfusion as a remedy in the case of persons exhausted by disease. and describes transfusion from artery to artery by means of Silver tubes.

Several other writers of the ancients and middle ages also mention the Operation and one even gives a picture showing how to operate. The very fact however that Hippocrates does not speak of transfusion shows that with the ancients it was more of a dream than

a reality. and discourages the idea
of its performance in an age when
medicine was so generally dominated
by the genius of this greatest of physicians.
Indeed it is manifest that until the
discovery of the circulation of the blood
such a remedy could have no
Excuse for its exhibition.
But in the Seventeenth century
we find that the battle which every
new theorist was to fight against
the rightful conservatism of Science
as well as the prejudices of
ignorance, was fairly opened.
Stimulated it is said by the
suggestions of Sir. Christopher Wren.
Dr. Richard Lower in 1665 first

transfused blood from the veins
of one animal to those of another,
with a success that warranted further
experiments. And on June 15th 1667
Jean Denis and Emmerets of Paris
successfully transfused with lambs
blood a young man who for a fever
had been bled, purged, and blistered
times innumerable. And was very
naturally sullen and delirious
this being the first operation performed
on man. Denis performed
the operation on several occasions
after this and in one case says
he restored to reason a mad man,
in whom forty bleedings had failed
to effect a cure. By two successive

transfusions with the blood of a calf
There was according to Monsieur
Denis was hatched a conspiracy
against transfusion and a decree
was made forbiding the employment
of transfusion. unless by the
consent of the Paris faculty. a
consent apparently hard to obtain
for the operation now fell into disuse
and so long remained.

Meanwhile fired by the reports from
Paris Dr. Lower and King on Nov. 23.
1667 transfused Arthur Coga. at
Arundel Hall London for no appar-
ent reason except curiosity. This
was performed by a direct commun-
ication of the patient with the

blood of a lamb by means of
Silver tubes the patient having
been previously bled to the amount
of Six or Seven ounces or thereabouts.
The tube then of patient was
connected with that of the lamb
and allowed to remain for about
two minutes so that a pulse could
be felt in the vein. The operators
Calculated that nine or ten ounces
were transfused. and the man
was so pleased with the effect
that he wanted the operation repeated
but was prudently put off.
Yet in spite of this success transf-
usion was abandoned but not
entirely forgotten. In the year

Seventeen Hundred and sixty four (1764)
Dr. Harwood) of Cambridge wrote
a thesis on the subject. and
performed many successfull
Operations or experiments upon Animals
In 1795 or thereabouts — Dr. Physic
of Philadelphia transfused)
in a case of Post-partum hæmor-
rhage. and this was undoubtedly
the first time the operation was
performed) in this Country.
The next case related is that
of Dr. George H. Gibbon also of
Philadelphia who is reported
to have transfused) in Cholera
about the year 1832. But the
restoration to favor of this Operation

is due to Dr. James Blundell of London. who in the year 1825 published his "Researches Physiological and Pathological" Dr. Blundell performed a large number of interesting experiments upon dogs. which proved conclusively the value of transfusion in the case of threatened death by haemorrhage In one case he revived a dog that to all appearances had been dead five minutes. owing to opening of one of the Carotids: but he found that the suspension of the powers or functions of life for a longer period than this was uniformaly fatal in spite of the

free use of the hot bath and artificial respiration. On another occasion he supported a dog for three weeks solely by the injection of blood, and during this whole time the dog showed no inclination to eat, though he took water, and at the end of the period did not seem dangerously disordered. In spite of considerable loss of flesh, and some constitutional disorder, and so on this operation has been gradually gaining favor so that at the present it is one of the generally accepted therapeutical means. Though little used by many physicians of large practice and of good reputa-

I shall now briefly refer. first to those diseases in which transfusion may be properly recommended and performed. Secondly to those in which it is of less benefit and thirdly to those in which it may be said to be almost if not quite Contraindicated.

We have now to ask: what are the diseases amenable or most benefited by the transmission of blood? This to answer in as few words as possible are those diseases characterized by great prostration of the powers of life such as we have from Haemorrhage either Idiopathic or traumatic &c

And now the question arises, what are the indications for the employment of transfusion?

(A person dying from loss of blood writes "thus" presents a fearful picture: his countenance is ghastly pale, his pupils are widely dilated, he pants and sighs for breath, his ideas are vague and confused: he is sick at the stomach and vomits: the extremities are icy cold, and the whole surface is covered with a profuse clammy perspiration: the thirst is unusually intense and unquenchable. The largest quantity of water failing to satisfy the urgent wants of the

dyspnœa, excessive restlessness and
dactitation succeed the patient
calls loudly for fresh air
Paroxysm after paroxysm of
swooning occur. the pulse has
perhaps been long lost or absent
from the Risk. the eyes assume a
glazed and fixed expression
the respirations grow more and
more feeble. and death steals
in so imperceptibly as to render
it difficult to determine the precise
moment of its occurence.

During all this time whether it embrace
only a few minutes or hours or
whether it extend through several
days. there is generally an entire

absence of pain the loss of blood
acting as an anæsthetic
These conditions are to be seen
in traumatic haemorrhages. as
ware large amounts of blood
are lost from Surgical Operations.
Haemorrhage after delivery. to
which cases Dr. Blundell restricted
its employment. or from whatever
cause it may occur. I next
present the class of cases to which its
use is attended by the best results
In Haemorrhage attended by great
shock to the nervous system such
as we see from Rail Road injuries
the operation is attended rather unfav-
orable results. but as the great-

mortality is not due to the loss of blood alone, but to the shock transmited directly to the nerve centers themselves. we should not be discouraged by the unfavorable results which attend upon such injuries. But should take the most active and approved steps that art and science can give, be the mortality ever so great yet a life may now and then be saved. therefore it is not only right that we should do so. but actually obligatory upon us to resort to the most active and approved means at our command be the consequences what they will

deeming it unnecessary to state more explicitly the different causes by which its employment may be necessary I will now proceed to enumerate some of the principle diseases in which it may act less efficiently or rather calling less vigorously for its employment I say less vigorously as in these diseases less or the simple employment of good food. Oxygene, tonics, astringents &c the life of the patient may be preserved Such are the diseases as are characterized by a tendency to haemorrhagic extravasation such a condition is to be found in low forms of fevers also in those conditions known as purpura simplex and haemorrhagica

also in those peculiar dyscrasias
or blood changes in which from some
unknown cause the blood has lost
that natural substance, or its forming
principles, which is so necessary for
the spontaneous arrest of haemorrhage
and from which cause some trivial
wound has caused such prostration
or shock that stimulents loose their
power to act, and reaction is uncertain.
In these cases transfusion promises
to save life and should always be
resorted to. The same may be said
of loss of blood occuring in the haemorrhagic
diatheses. and of those cases of bleeding
from the mucus tracts which so often
present themselves in the course of

low fevers such as Typhoid Typhus
Yellow &c

I would in these cases and conditions
use transfusion by the direct method
so as to give to the sufferer that
constituent of the blood which is
is already suffering from (fibrine)
And not use defibrinated blood
Excellent results have been reported
from the employment of transfusion
in the conditions of fevers already enu-
merated. Dr. Newling Stokes of New Jersey
reports a Case of Typhoid fever the
sufferer a child nine years of age
in the eight week of the disease and
thought to be convalescing, who was
suddenly seized with hemorrhage

from the mouth and kidnies
the skin also being covered with purpuric
spots. and that the prostration was
so alarming that immediate death
was expected. which by an injection
of two and a half ounces of defibrinated
blood was prevented and an excellent
recovery resulted. a great many
such cases are on record. but do not
deem it nessary to recall any more
In Idiopathic anemia. chlorosis.
Leucocythemia and exhaustion
the operation has not been so encour-
aging. as might have been from
the nature of the disease expected
although some benefit seems to
have been claimed for its employment

in these cases. But would myself prefer, from the nature of these diseases, to class them among the doubtfull class, as it seems very improbable that they could in any way be benefitted for any length of time in Asiatic Cholera although statistics show that the operation has been unfavorable. Yet there are sufficient number in which in the collapse of this disease, life has been directly saved. this is quite rational when we consider the condition of the blood in this disease, it being of a thick, very consistency so that it cannot perform its functions. and even the injections of water alone is of great

benefit as this is the constituent which is minus in the greatest extent from the blood. Dr. Morton's suggestion might perhaps be beneficial that is to bleed the patient and inject healthy blood. Dr. E. M. Hodder of Canada has reported three cases in which he injected Cows milk with two recoveries and one death. The patients are described as being in "Articulo mortis" at the time of injection

Scorbutis in this disease excelent results have been obtained from transfusion by Dr. Russel of St. Petersburg he having reported three cases and Dr. Malan one, with speedy recoveries in all

Carcinoma in this disease should condem such inteference as being hazardous. without the slightest expectation of doing any good Transfusion has been practiced in the fatal exhaustion incident to the eruptive fevers as. Variola. Scarlatina &c also in Dyptheria but without any incouragement. although performed in a large number of cases Transfusion has also been performed in Hydrophobia. Insanity. Tetanus. Epilepsy. Pyemia. Septicemia and Puerperal fever. but with as could redely be supposed no apparent benefit except some slight, and even recovery in the latter diseases.

but is very improbable as perhaps these were mild cases which would have recovered by the ordinary treatment. there being perhaps no purulent deposits in any organ or part of the body.

Uremia temporary benefit has also been derived. but nothing to incourage its further trial. Unless it be by the method proposed by Dr. Morton in Sun Stroke that is to deplete and then transfuse and in the former disease this if I understand the pathology according to Prof. Niles Correctly also in Carbonic Oxide poisoning in which diseases the morbid principles take hold of the

haemoglobine of the blood and prevent this substance from being deprived of oxygen so that the patient dies for the want of Oxygen. due to the fact that there is a greater affinity for these substances than there is for the oxygen Inanition should. I think be placed among the diseases in which it would be of service. although I am not aware of any case of the kind in which it has been resorted to. but will merely suggest that in extreme cases beyond the aid of ordinary means that this method be employed to renew the strength and health of the patient dying from Starvation. This I think should be thereby

investigated. for how often does it happen that prisoners of war long confined, or exploring parties are lost from the rest of the world and when found, the powers of life have so completely died away, as to be beyond the reach or aid of assistance by any timid or mild form of treatment. In these cases my opinion is that the greatest benefit may be derived from the transfusion of blood. many such Cases may be recited to show the necessity of such a mode of treatment but as this would be consuming time and labor unnecessarily I will simply call it to your remembrance

The Operation of Transfusion of blood may be performed by means of Dieulafoys Aspirator or in Urgent Case or from absence of this instrument an ordinary Syringe will be sufficient- Using the defibrinated blood for these instruments. If immediate transfusion is to be employed I think Dr. Aveling's instrument is certainly the best- as it is simple in Structure and application and being very efficient.

The kind of blood to be used must be decided by the Operator we know that a great deal has been said in regard to this subject- Dr Brown-Sequard advocating the employment of Lamb blood on the one hand and

Dr. James Blundell of London discarding every other kind except human so that it is dificult for one who has had no experience to arrive at a definate conclusion. But wer I to chose either I would prefer the human in preferance not only on account of its being of the same structure &c but it has been frequently and almost invariably the case that the injection of lambs or any other animal blood has caused rigors fever general depression erythema and a long train of symptoms not to be desired. hence proving the assertion of Dr. Blundell "that

blood injected from one species of animals into another acts as a poison"

As to the amount of blood to be injected no rule can be given except - as to condition of patient - and effect produced upon him giving freely large quantities in those suffering from loss of blood by haemorrhage and smaller ones for those suffering from more chronic affections. for reasons that are obvious

Having, I think, taken the subject into as full consideration as I deem necessary. and hoping that it shall be satisfactory

To the Honorable Faculty of
Physics of the Maryland Univ.
I will close by bidding you adieu.

Yours Respectfully
J. H. Drach

1850

A Poem

on

Education

By

J. Charles McPherson

Baltimore Maryland

Epilepsy

Since the earliest days of Medicine, Epilepsy has been considered as an essential affection of the brain, and is found successively ascribed to almost every conceivable cause. It has been found almost impossible to frame a definition of Epilepsy. We think it proper at least, to avoid the broad signification which all ancient and most modern writers have given it, by using the word as synonymous with convulsion, for the disease denotes something more than spasmodic action which is found associated with most disorders of the nervous system.

It is marked by periodicity and invariable unconsciousness. "Periodical convulsions with unconsciousness during the attack" constitute true Epilepsy.

The complaint formed in primitive days always an opportunity for the gross superstition of our ancestors. It was thought, also ascribed it to the malice of demons, or supposed it the just retribution of an offended God.

So ill an omen was it considered as often to dissolve betrothals if it occurred on such occasions.

At the present day it is known as the "Falling Sickness" and vulgarly known as "Fits."

By some authorities it has been

conceded that the seat of this disease is in the Medulla Oblongata, it being a nerve centre, by others again it is claimed to originate in the Cerebral Hemisphere, Either may be correct, for the disease may originate in either Hemisphere, and by nervous diffusion work down to the Medulla and mid that body by nervous influence, Or on the other hand it may originate in the Medulla and by same diffusion of nervous influence complicate either Cerebral Hemisphere, Be this as it may, it has been generally granted that the Vaso-Motor nerves are primary involved

According to definition it does not

follow- that every convulsion or spasm must be classed under the name of Epilepsy Neither does it follow- that lesions in the brain substance must be visible, for innumerable autopsies have shown a normal condition in all parts of this organ.

The pre-disposing causes of Epilepsy are numerous, The greatest of which is hereditary taint, Traumatic injuries of the cranium, Sexual excesses, &c Hemiplegia in early life is most always followed, sooner or later by Epileptic attacks

Classification

The French have classed Epileptic seizures as

consisting of two stages, viz:
"Grand or Haut-Mal and Petit Mal"

In Petit-Mal an Epileptic condition may be present unaccompanied by spasm though the Vaso-Motor system is implicated.

This degree of the disease may be attended with giddiness, paleness of the face and even a loss of consciousness.

As regards the period of life in which E. presents itself, from the age of Ten to puberty may be regarded as the standard

Regarding the occurrence of Epileptic seizures, nothing can be said with certainty, they are extremely variable.

I will not attempt to describe the phenomena afforded by a paroxysm

No one who has once seen the awful spectacle can fail to have it's every point indelibly impressed upon their mind. The paroxysm is generally announced, and characterized by abruptness of commencion, again there are certain precursory signs which will be spoken of elsewhere.

Grand or Haut-Mal

This degree may be divided into three distinct stages, viz:

Tonic — Clonic and Coma tic,

Before seizure some afflicted have a premonition of the occurrence of an attack, as a tingling, creeping or

fluttering sensation in the limbs, or a spasmodic twitching of certain muscles this forerunner has been termed "Aura" in other cases the attack comes on suddenly, the Aura being absent.

In the tonic stage the patient utters a strange peculiar sound, he seems to lose instantaneously all control of his muscles, he drops to the ground as if struck by a heavy blow, the head is drawn to one side by the contraction of the Sterno Cleido Mastoid muscle, the face assumes an ashy-paleness and in some cases frightfully distorted, all of the muscles of the Thorax are in a state of convulsion, Contractions may at times be confined

to one side only, in other cases both sides of the body may be implicated. The arms and legs are in a state of pronation, the hands are clenched, the nails buried in the palms, the feet arched and tense. This muscular rigidity can not be overcome, and though the muscles contract with a degree of slowness, they are agitated by a peculiar quivering of their fibres which is plainly perceptible to palpation. It is during this stage that the sufferer often injures himself about the face, scars being inflicted. They may often serve as diagnostic points.

The muscles of the Thorax and Abdomen are in a condition of tetanic rigidity,

and as a consequence, respiration is completely arrested, This state may last for a few seconds, the Thorax remaining in a state of perfect quiescence, the face begins to flush the veins of the neck now become distended, and the face assumes a livid hue, the tongue violently thrust forward and the Tonic stage passes away succeeded by the Clonic,

The limbs now become alternately flexed and extended, the convulsions being more violent on one side; the muscles of the chest and face are markedly affected, the breathing becomes jerked and noisy, the spasmodic movements

become gradually slower. when, finally the muscles are suddenly stretched out and extended the patient has a deep sigh and the tonic stage is over.

During this stage the tongue frequently suffers laceration, owing to the muscular action of the jaws closing upon it forcing the teeth through it causing the issue of the bloody appearance of froth from the mouth on expiration. This stage has been often taken advantage of by criminals who to escape punishment for crimes committed assume the disease in question, Yet their detection is an easy matter to the competent physician.

They are very careful in falling as to cause no serious injury to themselves, and as a genuine Epileptic is insensible to light, touch or smell, a strong light to the eye, or a slight Electric shock, or a little Ammonia to the nostrils will soon decide all questions of doubt.

With the termination of the latter stage the attack may be considered as having passed away. Men lets in the third stage, or one of stupor, termed the Apoplectic form, The entire system appears as if it were under the influence of a strong narcotic, the breathing is stertorous the intellectual powers and those of sensibility are completely destroyed, the bedcloth may

be pinched or burnt without evincing
any token of pain, if the eyes be
examined, the pupils are found dilated
and refuse to contract under strong
light, At length the patient opens
his eyes, gazes about him in a stupid
and confused manner, he attempts to
rise, but instead falls and reels, he
seems attached and if questioned is
unable to articulate, and is totally
unconscious of all that has transpired
he allows himself to be led in any direc-
tion without resistance, for some min-
utes his mind is dazed, and often
a loss of memory, which however
will wear away in a day or so, and
the patient regain his wonted health & spirits,

Petit-Mal

In this phase of the disease, the patient may suffer at intervals from a more marked intellectual disturbance, which may range from a slight melancholia to a state of absolute mania, this condition may last for a few hours or even to a period of several days,

The principal characteristic of Petit-Mal may consist in a confusion of ideas accompanied at times by impulsive action and fits of violence,

The most common disease with which Epilepsy may be confounded, is a species of convulsion termed Eclampsia, and can only be

discriminated by the rapid recurrence of its attacks, while those of Epilepsy are at more distant intervals, may be months or even years — Also when the cause of Eclampsia is removed the disease terminates; but in Epilepsy one attack is always the forerunner of another,

Diagnosis

As before stated and upon which too much stress can not be laid, the all important diagnostic sign is loss of Consciousness, Scars on the face, lacerated tongue, involuntary emission of Urine during sleep.

A dislocation occurring and for which the patient cannot account, are all in themselves valuable aids in making a diagnosis.

Again, if you examine one or two days after an attack, you may find upon the neck, chest or forehead a number of minute red spots, resembling flea-bites, which do not fade away on pressure, and bear the characteristics of ecchymosis, this symptom is a valuable sign.

And, epilepsy may be confounded with cerebral congestion, cerebral hemorrhage Hysteria &c. but in these troubles consciousness is not lost, and all cerebral affections (that

accompanying symptoms — pain in-
facility - difficulty of speech &c.) seem
to indicate them as seperate and
distinct diseases,

Prognosis

Depends
in great measure on the duration
of the disease, Recent cases have
been cured, but those of a longer
standing, such as have lasted for
years, generally terminate fatally,

Among the most unfavourable el-
ements, are the existence of hereditary
influence, the beginning of the
disease in advanced life, the
existence of brain disorder, and

a long period supervening between attacks –

I will relate a case of my own in regard to influence of the presence of an Epileptic upon those of an Epileptic diathesis.

Two boys (cousins) aged 14 and 16 were the sufferers from this disease, theirs being of an hereditary nature. While living at different homes they were attacked with paroxysms more or less frequent. Seeing more of one than the other and being asked to treat him, I put him upon treatment, which had the effect of decreasing the attacks remarkably, they were becoming less

frequent and severe, while in this
unbecoming condition, he was visited
by his cousin similarly afflicted.
From the date of this arrival, the
first mentioned ones attacks began to
increase, the frequent attacks of her
cousin being witnessed by him, I
immediately advised their being
seperated, my advice not being
followed until the parents saw their
son was returning to his old condition.
They were then parted, from which
time with the continuance of treat-
ment the patient began to improve.
This was during the Fall of 78
since the middle of January 79
the patient has been entirely free from

a single attack, while the parents are congratulating themselves upon a permanent cure, I still advise them to be prepared at any time for another attack, upon which to immediately renew the same remedial agencies, and continue their use for some time, whether there be more attacks or not.

Regarding the probable supervention of intellectual debility, the most important fact elicited, is, that the milder paroxysms unattended by convulsions are more likely to produce mental decay, than those of a more severe nature. Death seldom occurs during a paroxysm, but at times some intercurrent affection may

carry off the patient. But if death should occur from an attack directly, it would in all probability occur during the convulsive form of seizure!

However, to the repeated inquiries of friends as to the probable issue, the citation of Caesar, Napoleon &c (who were afflicted with this terrible malady) which celebrated characters may offer encouragement, seemingly, as they did to preserve both mental and physical integrity, in spite of the doom with which medical science would brand all such

Treatment

terms

the existence of a paroxysm, nothing

can be done, as far as remedies are concerned, Try to divert the attention of the relatives from the patient, loosen the neck-band about the patients throat, place a piece of soft wood or other material between the teeth that the tongue may be protected, Blood-letting is never indicated or at least required,

If diet be suspected as a cause caution the patient how to guard him-self in future, and by all means, never if it be in your power, allow the patient to despair, Cheer him upon every occasion, Enliven his prospects, that he may not relinquish hope of a cure, and so relapse into a state of utter despair, resigning all hopes and ambition to

what might terminate in a life of pleasure and future usefulness.

It is useless to enumerate all the different means used in the treatment of Epilepsy, quoting the words of a member of our eminent Faculty, "the more difficult a disease is to treat the more numerous are the remedial agencies"

The Bromide of Potass has surpassed all other remedies in its favourable effect and power to modify the disease in question,

To avoid sleepiness during the day time give smaller doses than at night,

If the patient do not improve on small doses, increase the amount, push to the point of Bromism, never allow an

intermission to occur if the patient is receiving any benefit from the drug.

Surround the Patient with the best Hygienic measures. If possible eradicate all vicious and dissolute habits.

Though the nervous system lies hid deeply within a bony case, it should be the duty of every intelligent physician to take advantage of every opportunity, not only of the living but of Cadaveric investigation, that they may prove previously established hypotheses, overturning all erroneous opinions, that if possible they may thwart a disease coming among us, which may be classed with the greatest, if not at the head of all the

the unspeakable woes of humanity.

In conclusion it will be seen I have not ventured to throw out any consideration over a subject which has to be proven, not so much with Clinical as with Anatamo-Pathological facts,

Hoping that what has been expressed will meet with your approbation, I submit the same to your charitable consideration

J. Chester McPherson
Baltimore Md

Janry 19th 1880

Class of 1880

Paul S. Rowe.

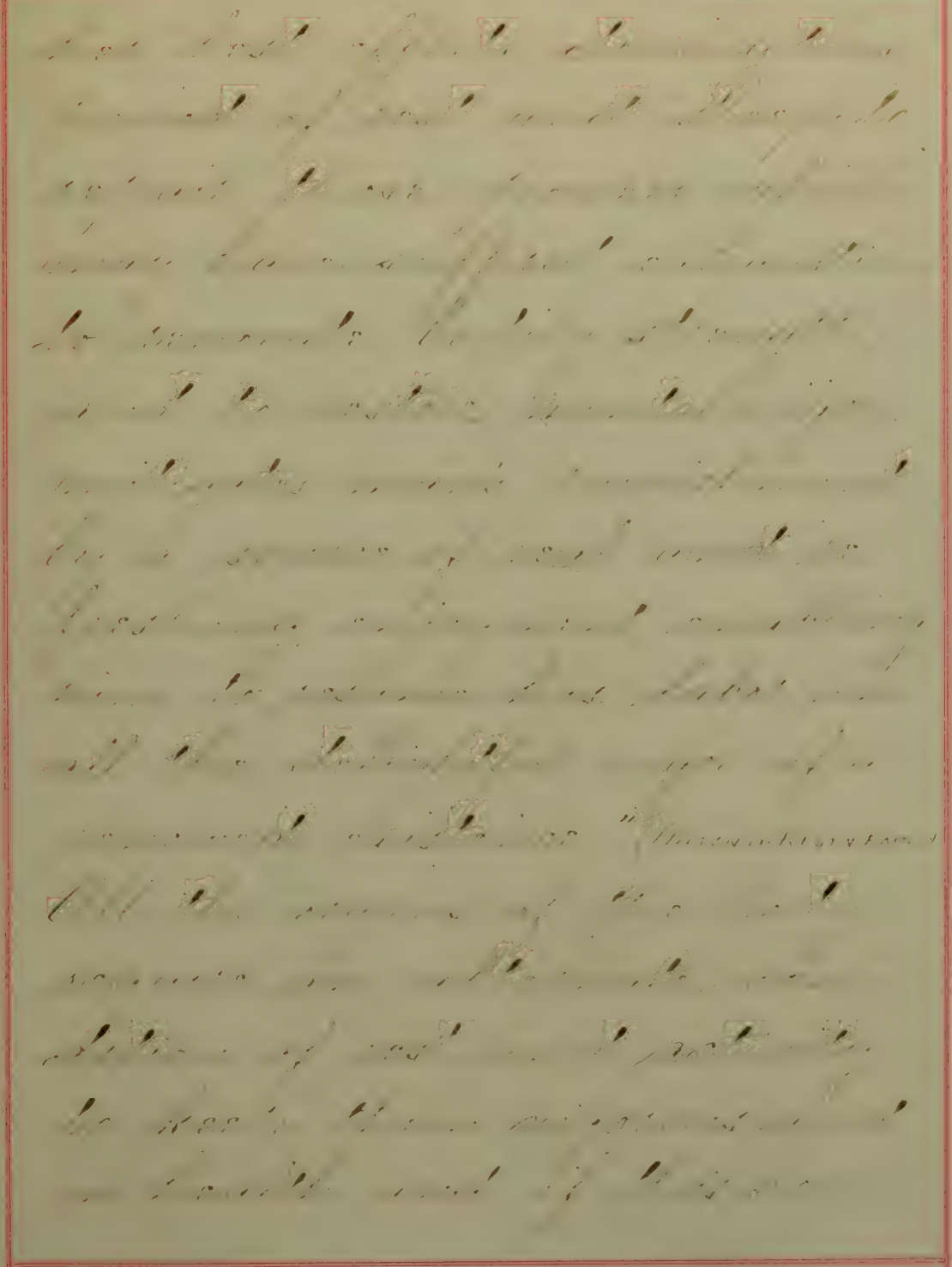
Rest

As A Therapeutic Measure.

University of Maryland,
School of Medicine,
Feb 11 1850.

Rest as a Blessing [illegible]

"When God ordained [illegible] man [illegible] the [illegible] of his face, as a punishment for his disobedience, it pleased [illegible] [illegible] sleep, a blessing which should [illegible] [illegible]



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to the bed for a consider-
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
monia on that side only.
[illegible]
[illegible]
noticed that [illegible]
[illegible]
[illegible]
[illegible]

[illegible]

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than [illegible]

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for the alleviation of an

work

as the extraneous body remains. Thus it has become an axiom—"Remove the cause before attempting the cure." Now, the removal of the cause is but a mode of giving rest.

Nature always attempts, and as a rule succeeds to give rest to injured or diseased parts. This is displayed in many ways. Thus, in inflammations of serous membranes there is an effusion of coagulable lymph for the purpose of giving rest to the inflamed surfaces.

Diphtheria.

A contagious disease, of which the characteristic phenomena consist in the formation of which Membranous follicels on certain mucous surfaces, more especially those of the fauces, nares, larynx, trachea,

Like most other infectious diseases, is met with in the sporadic form, and from time to time breaks out into virulent and widespread epidemics.

It was regarded by a large number of the most experienced physicians as a disease almost, if not quite, new to the country.

They were well acquainted with membranous inflamation of the trachea, or croup - a disease, too which had been known to occur in an epidemic form; but they failed to see, as many still fail to see, that between the characteristic forms of croup, from which the classical description of the disease was taken, and diphtheria there is no essential difference.

Diphtheria is a disease of all countries and of all seasons, and affects both children and adults.

It is nevertheless far more common among -

young children, especially between the ages of three and six, than in persons of more mature age, and is both actually and relatively much more fatal to them.

There is reason to believe that the sanitary state of houses or localities, and the condition of health of those who are exposed to its poison, have much influence over its development. It is not, however, very clear what forms of uncleanliness or what constitutional conditions are most influential in this respect;

for

we know that those who appear to be in the best of health often take it,

Diphtheria is undoubtedly contagious, the introduction of a case into a house or hospital or other institution, containing many inmates, is almost certain to be followed by an outbreak of the disease amongst them,

Sometimes every child of a household is swept away; The contagion is doubtless carried by the atmos-
-phere.

And is said to be carried in the clothes also.

There is no doubt that it can be imparted by inoculation.

Many cases are recorded, in whom a fatal attack supervened on the reception into his mouth of a small quantity of saliva coughed out by a diphtheretic child.

It has been claimed to of been given to rabbits by introduction of diphtheretic matter into the trachea.

It may be presumed that the patient is most apt to impart the disease while the membranous exudations are present.

Symptoms.

The period of incubation is not known.

Some patients appear to have contracted diphtheria a few hours only after exposure to its virus.

The incubative period is about between the first few hours, and eight day's.

The symptoms of the disease, consist of elevation of temperature, with slight uneas-iness, or soreness of the throat.

There may be chills or rigors, if the interior of the throat be examined there may be some degree of redness,

and tumefaction of the tonsils. And very soon afterwards whitish or grayish opaque patches will be seen on some parts of the congested surface - They spread rapidly and soon cover the whole surface. The throat may be found in this condition when attention is first attracted, by this time the tonsils are very much enlarged, and the glands about the lower jaw are involved. In some cases the membranous exudation, extends into the oesophagus, reaching in some instances into the stomach.

In a mild case

you may just find one or two white patches, on one or both of the tonsils, When the membranous exudation covers an extensive surface, especially if at the same time, the tonsils and uvula are much swollen, the symptoms are much more serious and the duration of the malady is prolonged. Occasionally, and more commonly in adults than children, the breath acquires a fetid and distinctly gangrenous odor, the false membrane at the same time assuming a dirty gray or blackish hue,

Extention of the diphtheretic inflammation along the oesophagus is not very common, nor is it attended with any marked symptoms. Both difficulty and pain in swallowing.

Diphtheria of the air-passages constitutes one of the most frequent and at the same time one of the most fatal of the varieties of the disease. Diphtheretic affections of the larynx and other air passages may either be secondary to pharyngeal diphtheria, or may commence in the larynx, or in the bronchial tubes.—

the child, for although mem-
-branous croup occurs in adults,
it is children who mainly suffer
is firs attacked with a short dry
perhaps metallic cough and
hoarseness of voice, symptoms
in this affection of the worst omen,
even if in other respects he appears
to be well.

But some difficultity su-
-pervenes in breathing commencing
usually in the night. The symptoms
now rapidly increase in severity;
the respirations, inspiration more
espiration, become noisy especially
after coughing; the voice grows
hoarse and weak, or fails;

Cough becomes, suffocative, harsh, wheezy, occasionally but not commonly heard; and during the fit of coughing the child, tosses itself about, sits up, clutches whatever is near it, throws its head back, opens its mouth, dilates its nostrils and struggles for breath; between the intervals of cough the child; it appears to be at Ease & comfort.

Death takes place, in a few hours but rarely later than the fourth or fifth day after the commencement of symptoms. In adults, the course of the disease is usually not so

acute. During the progress of the attack the respirations increase in frequency; the pulse becomes small, weak, and rapid; the surface especially of the lower extremities, cold; and perspirations break out. The extention of the false membrane throughout the bronchial tubes, and the begining of Pneumonia, are indicated by rapidly increasing imperfection in respiration, with falling in of the lower ribs and intercostal spaces during inspiration. Emphysema of the neck and head occasionally becomes developed.

Although in vast majority of instances diphtheria commences either in the pharynx or in the mucous cavities which communicate directly therewith, cases are occasionally met with especially during epidemics and amongst the members of infected households in which the diphtheretic inflamation and peculiar formation first make their appearence in some other region, occasionally in the vulva or vagina, on the glands penis and foreskin, at the anus, in the external auditory meatus, or on excoriated or raw cutaneous

surfaces. The redness of the affected part is more or less vivid and intense, the pellicle is white or buff gray or black, something like an eschar, and adherent to the surface; and when the skin is the part involved its extension is attended with the formation of vesicles at the margins, which run together, and lead to the development of spreading excoriations which become presently clothed with the enlarging pellicle. Just as in many cases of primary diphtheritic false membranes appear after awhile on various parts of the surface of the body—

Morbid Anatomy:-

The morbid changes which take place are almost limited to the circumscribed inflammations which have been discussed. In most cases the affected parts are congested, swollen, and infiltrated.

The inflamed surface secretes abundant thin mucus; and soon an opaque layer forms upon it. This increases by additions to its under surface and to its edges, and is attached to the subjacent mucous membrane, partly by general adhesion, partly by prolongations extending into the mucous and other follicles.

In the first instance it consists only in the inflammatory proliferation of the epithelial cells, which become cloudy and are apt from the shrinking of their protoplasm before long assume a stellate form, resulting interstices being probably occupied by mucus. This appears to be its permanent condition in the pharynx. But in the air-passages a fibrinous exudation takes place before long at the surface of the membrana limitans, between it and the modified epithelial layer which it displaces, and coagulating there forms a more or less distinctly laminated

network of fibers which entangle leucocytes but very rarely distinct epithelial elements.

The membrane varies considerably in thickness and consistence. When very thick, the superficial parts are often pulpy or flocculent. Their detachment is often attended with excoriations and sometimes with distinct ulceration; and occasionly gangrene occurs. We have pointed out the localities in which diphtheretic membranes are chiefly formed. It remains to say that when they extend into the nose or into the larynx, they adapt them-

selves accurately to irregularities of surface, and form complete solid casts of such diverticula as the sacculi laryngis: and that, when they involve the bronchial tubes, they extend sometimes to their finest ramifactions, forming arborecent laminated casts. It is mainly when the air-passages are invaded that collapse of lung and lobular pneumonia take place, and, in children, interlobular emphysema, going on (it may be) to the production of general emphysema. Hemorrhages take place in the lungs, kidneys, heart and other organs. &c

Treatment.-

The treatment of diphtheria is a subject of much interest and importance, and not the less so that great variety of opinion has prevailed even in regard to points of vital moment. Depletory measures cannot be adopted without grave risk. To this end, nourishment by appropriate kinds of food, and the use of such tonics (medicines as the patient can bear, must firmly enforced. The liquid or pulpy foods generally administered in acute febrile disorders are suitable here; for medicine it is fashionable to prefer the solution of Ferri Perchl.

But other preperations of iron may be given, by some chlo. potes. with the addition of hydrochlo. acid is strongly advocated. For local treatment of the Mucous Membrane, hydrochlo. acid is very good some, preferargenti. nit., or bi-carb. soda, or pure tincture of the per. chl. ferri, or creosotee, alum, or the like. Emetics are often given to break up the Mucous Membrane when the Membrane tends to pass into the larynx especially. It is best to give those which act rapidly and without inducing much depression; for these persons ipecacuanha, cupri sulphi. or

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preferably to any antimony.
as soon as an implication of
the Mucous Membrane of the
larynx or trachea occurs, the
question of the performance
of tracheotomy will necessarily
and properly present itself.
In the treatment of convalescence
all efforts should be directed to
improve the general health
of the patient and give him
strength, such as quinine, iron,
good diet, stimulents etc.

Respect'ly—

Amos N. Clark
1880 Md.

A Thesis

on

Chloral Hydrate

By

F. H. Sidwell & Md.

Session of 79 & 80.

Chloral, although discovered by Liebig in 1832, was not brought prominently before the Medical Profession as a therapeutic agent until 1869, when Dr. Otto Leibreich made his statements before the Medical Society of Berlin. In its preparation dried chlorine gas is passed through pure anhydrous alcohol, after which, the product thus obtained is heated with concentrated sulphuric acid, and the crude chloral which separates is then rectified over lime. The reaction which takes place, in its formation, is very complicated; but it is thought that the alcohol gives up five equivalents of its hydrogen which are replaced by three of chlorine. It is a limpid, oily,

colorless liquid, with a fatty taste and a strong caustic smell, the vapor of which is very irritating to the eyes. Its specific gravity is 1.502 and boils at 203°F. It mixes in all proportions with water, alcohol and ether. Anhydrous chloral is not used as a therapeutic agent, as it readily undergoes decomposition and becomes solid, but it combines with water to form the hydrate which crystalizes in a mass of small white needles and from its stability and less irritating [illegible] is greatly to be preferred for medicinal purposes. Besides the chloral hydrate there is another termed chloral Alcoholate. This preparation agrees with the chloral hydrate in appearance but is

distinguished from it by its insolubility in water and its solubility in cold chloroform. The preparation called meta-chloral is well adapted to local use, and is formed by treating one part of chloral hydrate with three parts of concentrated sulphuric acid, and washing the substance thus formed as long as the washings give an acid reaction. This substance is insoluble and less caustic than the hydrate. There is still an other preparation formed from chloral hydrate, which is highly recommended as an anodyne in neuralgia and chronic cough. It occurs in white crystals, is slightly soluable in water and is formed by the action of chlorine on

aldehyde. It should be given, dissolved in syrup or glycerine, in from one to ten grain doses. I have thus briefly noticed all the most important preparations of chloral (for all of them have proved themselves to be of value to the practitioner) and with this brief I will proceed to the consideration of that preparation to which the most attention has been directed and from which the best results have been obtained namely- The Hydrate. Although this remedy practically has been in use but one decade; yet the extent to which it is now employed, the results that have followed its use and the favor with which it has been received, proves that it has gained a lasting hold on the practitioners affections and

should be classed among the best therapeutic agents of the Materia Medica. Hydrate of chloral is incompatible with the alkalies which decompose it into chloroform and formic acid; hence it was inferred by Dr. Liebreich that when chloral is taken into the circulation it is decomposed by the soda there met with and that the chloroform resulting from that decomposition is the active agent. Dr. John B. Biddle demurs to this as he says the effects of chloral are not identical with those of chloroform. Dr. Roberts Bartholow even goes further than this and confronts Liebreich's theory with the following objections:— 1st. "The effects of chloral differ from those produced by a corresponding

quantity of Chloroform." 2nd " After the ad=
ministration of Chloral, there is no elimination,
by the breath or urine, of Chloroform." 3rd " Chloral
is decidedly more hypnotic, and much less
anaesthetic than Chloroform." 4th " Crystals
of Chloral have been recognized in the blood,
and the products of the decomposition of
Chloral have recently been recovered from
the urine." In moderate doses, (gr xx - xxx)
Chloral produces a quiet and refreshing sleep,
with no effect on the secretions from
the bowels, while the kidneys are slightly
stimulated to increased action. The pulse
is unaffected. The most unpleasant effects
following its use are nausea and headache.
When larger amounts are taken the sleep
becomes deep and passes into coma.

the respirations become slower; the tem=
perature is lowered; the fulness and
frequency of the pulse is reduced; the
muscular system is relaxed and sensibility
and reflex action are diminished. Dr. Liebrich
in his experiments showed that unconscious=
ness first supervenes after its administration
followed by loss of reflex excitability and
lastly the stage of excitement produced
by chloroform is identical with the latter
in its effects. Chloral like chloroform acts
first on the ganglionic cells of the brain,
then on those of the spinal cord, and finally in
fatal cases on those of the heart. When a fatal
dose has been taken the circulation and
respiration are diminished in frequency,
the conjunctiva become ... the pupils contracted,

the muscular system is completely relaxed, the lips become livid and the jaw falls. There is sometimes an eruption on the skin to be seen. Death results from complete paralysis of the heart, when the heart will be found completely filled with blood; or from the failure of respiration or from these two causes combined. Chloral has been given in very large doses without unpleasant effects, while in comparatively small doses it has proved poisonous. According to our best and most reliable authority, as much as 460 grs. have been taken with impunity, while 50 & 60 grs. have produced alarming symptoms. This will suffice to show that with this as with all potent remedies it is very necessary for the

Physician to continue great care with good judgement; Chloral fails to produce sleep when the Bromides will accomplish the end; and if long continued use will be followed by pains in the joints. These pains are unlike those of Rheumatism since they will not be assuaged by the chloral, but if it be further continued will be followed by pains in the thick parts of the thighs and arms, and finally in the legs and forearms. Dr. Griffith calls them chloral pains. These pains will be followed by a weakened condition of the mind, any great mental exertion being impossible. The patient becomes restless and fidgety, the eye possesses a wild, scared and vacant look. This look

alternates with the usual one, a further continuance of the drug destroys the alternations and the vacant look is alone left, followed by acute delirium. The patient will complain of the head feeling large; of the eyes filled with sand, the eyelids stiff; a choaking sensation in the throat; pain, weight & distress at the heart and stomache. Pain spreads over the whole body. The veins of the head and scalp will be found to be full; the scalp, puffy and tender; the eyelids swollen, red and everted; the eyeballs bloodshot; (and owing to the engorgement new blood channels are seen crossing) The throat becomes congested, suffused and red. The pain is diffused over the body, probably from

congestion and irritation of the spinal cord. After the medicine has been swallowed, pain in the stomach with nausea and depression will ensue, followed by nausea and emesis as intolerably as strychnia, with giddiness and faintness. If emesis continues, bile, gastric juices, mixed with oesophageal, pharyngeal and mouth secretions are thrown off. These symptoms usually supervene immediately after its administration and sometimes not for a considerable time after it has been swallowed. These symptoms may continue for some days unless the use of the drug be discontinued. Dr. Griffith makes mention of several children that were supposed to have incipient hydrocephalus

(because they presented the above mentioned symptoms) that entirely recovered by a discontinuance of the drug. They had evidently been suffering from chloralism. Upon the action of chloral Dr. Griffith uses the following language:- "I believe there is at first in the brain, arterial anemia, next venous congestion and engorgement leading up to such venous dilatation, as to produce pressure on the brain, the brain substance being compressed between the dilated venous channels, at the same time that its arterial supply is still further diminished by this venous distension, as well as by the arterial anaemia dependent on the contracted or unfilled condition of the arteries, partly

from the effect of the drug on the arterioles themselves, and partly because of the reduction of the heart's impulse". If these conditions are prolonged serous hemorrhage will occur or that condition termed oedema of the brain; and this condition is encouraged by the enfeebled heart's as well as by the blood stagnation. In the primary stage according to Dr. Griffith "The heart's action will often be found strong and violent. The pulse, unless there be actual counteracting heart and artery disease, being full and strong, with a certain degree of bound and rebound or quick depression, which is think indicative of cardiac muscular weakness induced by the presence of the

medicine". He further states that this condition gives way to dilitation and weakness of the heart. The brain is at this period markedly affected. The patient is sleepless, talks incoherently, is exceedingly restless, getting in and out of bed, making and unmaking it, and sees all the imaginary sights that so infests and horrifies the drunkard who has the worst forms of delirium tremens. In a word the disease (if it may be so termed) so nearly simulates delirium tremens that the young and inexperienced practitioner may mistake chloralism for alcoholism. The three stages of alcoholism, namely:- Stage of sleeplessness, excitement or acute mania

and nervous prostration, are in the majority of cases as well marked in chloralism, although the first may be wanting sometimes or be but transitory. It is therefore very necessary that we should have some reliable guide if possible to enable us to distinguish between these two conditions, as the treatment should be quite different in the two cases. To use chloral in cases where the above mentioned symptoms have been brought about by its use, would be but to aggravate them; while if it were a case of alcoholism, decided relief would follow. The following diagnostic points of difference have been furnished us. The tongue in alcoholism is dry, with fur

being red and rasp like. In chloralism the tongue is soft, moist, flabby, enlarged and most frequently whitish fured. The constipation in the latter is not so obstinate neither are the motions so dry as in the former. In chloralism the skin is soft, moist or perspiring, in alcoholism dry. The most characteristic point of difference, however, is the effect of chloral on the chloral and alcoholic patient, which may be very quickly produced. A patient suffering from the effects of chloral will drink with avidity all fluids, there being no cry for ardent spirits as is the case with the drunkard. The heart sounds will be feeble, the beats quick, rapid and irritable and the pulse a mere thread.

The ... d is reduced to a state of irritability. General twitchings or slight convulsive seizures will be noticed over the entire body, caused by venous apoplexy. This condition of things may last until the heart becomes paralyzed and death result. This result most often follows in patients where there is general debility and fatty heart or atheromatous degeneration of the vessels; and especially if complicated with congestion of the lungs, bronchitis or pneumonia, when the symptoms may not unlikely be attributed to the disease instead of the drug. Hence we should be very cautious in administering the medicine when these conditions are present and especially in the aged or

middle aged. I have thus far, in a feeble and disconnected manner, endeavored to describe the action of chloral in legitimate and in poisonous doses, to notice the effects produced on the various organs of the body, to mark out the symptoms as they arise and in the order in which they follow each other; and although I am very cognizant of the fact that the description is very defective in many particulars and not at all complete, yet I must content myself with this meagre description, and pass on next to the consideration of chloral as to its therapeutic application. But in passing, might say that as death results from the paralysis of the cardiac motor ganglia and the

respiratory center situated in the medulla oblongata, that we should use in cases of chloral poisoning; stimulants, such as, Ammonia, atropia, alcohol, electricity, and finally, if these measures fail, should, according to the teachings of Dr. Liebreich, resort to the hypodermic use of strychnia, Perhaps no remedy of either ancient or modern times has been so extensively used, in so short a period, as chloral; and the extent to which it has been used may be taken, I think, as the proper index of its usefulness, As is the case with all new remedies, some physicians prefer waiting until its merits has been fully established, before using; while others always on the alert to promote

medical research, and to widen and extend the field of medicine, take up these remedies as they arise, either to prove their value or otherwise. Chloral has been no exception to this rule. Experiment upon experiment, with this drug in the hands of the most skilled and learned of our profession, has proved its efficiency, value and harmlessness, if properly used, so that no physician of this day would hesitate to use it under the proper circumstances, present themselves. Chloral has been highly recommended in a variety of affections, in the majority it has proved highly efficacious, while in some its employment has led only to disappointment. Thus we find it very highly

lauded as a local application not only in diphtheria but in tonsillitis and kindred diseases. Dr. Chitwood recommends in tonsilitis chloral hydrate ℥ℓ to glycerine ℥ℓ to be applied with a camels hair pencil every six hours, and further adds that in every case it has given entire satisfaction used with the usual constitutional measures. Chloral is highly spoken of as a remedy. The chloral should be rubed up with tragacanth and applied, (having been spread upon a cloth,) a blister will be produced without pain, in addition a part is absorbed and its hypnotic effect is produced. Chloral is useful in all diseases where the vital forces have been overtaxed and become weakened and

where good and refreshing sleep is de-
sired. Dr. Smith highly recommends it in
pertussis and makes use of the following
language:- "As the paroxysms are apt to be
more severe at night and the patient
consequently be deprived of the required
sleep, a medicine is indicated which will
procure some hours of rest; and thereby
diminish the number of paroxysms. For
this purpose the hydrate of chloral is es-
pecially useful given in doses of two to
five grains, according to the age, and
perhaps repeated. It does not seem to
me that chloral exerts any marked
influence upon the cough; it seems to be
useful chiefly in the manner stated,
namely, by procuring prolonged sleep".

Likewise the same author advises its use for the same purposes in remittent and typhoid fevers, and many physicians of high standing can bear testimony of its efficacy in treating these diseases. Chloral has been highly recommended and by the very highest authorities in the management of insanity, melancholia, puerperal eclampsia and maniacal delirium. Dr. Leidesdorf in his chapter on puerperal insanity after giving the treatment that has been adopted by the profession, recommends chloral and speaks of it in the following flattering words. "I can without hesitation corroborate much of what has been advanced of late in regard to

the marvellous effects of this drug in the treatment of convulsive diseases."

To further illustrate the benefit of the drug in puerperal eclampsia, I will give the history of a case, taken from the "Gazette des Hopitaux" — Feb. 22nd, 1873, — as recorded by Dr. Leishman in his valuable work on obstetrics. — "A woman of twenty one, pregnant for the first time, who had suffered for fifteen days from oedema of the lower limbs and of the eyelids, from headache, somnolence, great weakness and frequent calls to vomit, was admitted to the hospital of la charité under the care of M. Bourdon. On her admission a large quantity of albumen was discovered in her urine, three

days, passed without any appreciable change in her condition, but on the fourth day a violent attack of eclampsia took place, which lasted ten minutes. During the period of resolution, an enema containing four grammes, a little more than a drachm, of hydrate of chloral was administered, after which the patient almost immediately fell asleep. At the visit on the following morning labor had not commenced. Foreseeing the probability of a renewed attack M. Bourdon had two injections prepared, each containing four grammes of chloral. The first was administered at ten O'clock in the morning just as labor had commenced. The second was given two hours afterward.

At three O'clock the labor terminated, without the woman having experienced the slightest pain. On the coming of the birth, a second eclamptic attack took place, & draught of four grammes of chloral was at once administered; she had a quiet night, and no fresh attack took place; the oedema rapidly disappeared, and the patient left the hospital fifteen days afterwards"

Chloral is now being used quite extensively in obstetric practice, and by some of our best authors is now classed with ether and chloroform as the anaesthetics in common use. Dr. Leishman says. "It is now pretty well known that a patient thoroughly under the influence of this

drug, may go through the whole stages of labor without sensation of pain or any consciousness of the process which is going on". Which chloroform and ether may be more certain in their action and the desired degree of anæsthesia be more quickly induced, yet the accidents which have followed their employment, will tend to limit their use only in the most urgent cases, while chloral without those objections is forced to supplant those agents with many. I think it probable that this dread and fear that the older physicians have of ether and chloroform will persuade them more towards the use of chloral, and at no distant day

will be hailed as the sheet anchor in obstetric practice. It would be indeed a laborious and tedious task to enumerate all the uses that chloral has been put to and all the diseases that at one or [illegible] other time of their history have been [illegible] to its influence. [illegible] it the [illegible] companion of the Physician, the Surgeon and the Obstetrician, and all hail it as one of God's [illegible] [illegible] gifts intended for the cure of disease and the [illegible] [illegible] [illegible] [illegible] that better results are obtained [illegible] the application of a solution of chloral hydrate, grs x xx to [illegible] [illegible] [illegible] [illegible] [illegible]

local medication - It will promote healthy granulations, and transform what was once a ragged, unhealthy and indolent ulcer into a healthy one and thus secure its healing - It is especially [illegible] in chronic ozena, as an injection [illegible] most in [illegible]. I have already quoted from Dr. Leishman's [illegible] on obstetrics to show its value in obstetric practice, [illegible] entire freedom from pain. It is es- [illegible]

[illegible]
doses have been taken or the desired
result obtained — In addition to the
[illegible] affections I would still
[illegible]
[illegible]
[illegible]
great and it is claimed [illegible]
its [illegible]